

Exhibit 28

IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK

IN RE: ACETAMINOPHEN	:	
- ASD-ADHD PRODUCTS	:	MDL NO. 3043
LIABILITY LITIGATION	:	
	:	CASE NO.
	:	1:22-md-03043
THIS DOCUMENT RELATES	:	-DLC
TO: ALL CASES:	:	
	:	Judge Denise
1:22-md-03043	:	Cote

- CONFIDENTIAL -
- PURSUANT TO PROTECTIVE ORDER -

September 1, 2023

Videotaped deposition of ALEX KOLEVZON, M.D., taken pursuant to notice, was held at the Best Western Plus & Venue, 503 Washington Avenue, Kingston, New York, beginning at 8:31 a.m., on the above date, before Michelle L. Gray, a Registered Professional Reporter, Certified Court Reporter, Certified Realtime Reporter, and Notary Public.

GOLKOW LITIGATION SERVICES
877.370.3377 ph | 917.591.5672
deps@golkow.com

<p>Page 2</p> <p>1 APPEARANCES:</p> <p>2</p> <p>3 WATTS GUERRA LLP</p> <p>4 BY: MIKAL C. WATTS, ESQ. (In person)</p> <p>5 BY: HAILEY WATTS, ESQ. (In person)</p> <p>6 BY: SHELLY SANFORD, ESQ. (Zoom)</p> <p>7 BY: JOHN CRACKIN, ESQ. (Zoom)</p> <p>8 BY: JERRY WHITE, ESQ. (Zoom)</p> <p>9 875 East Ashby Place Suite 1200 San Antonio, Texas 78257 (210) 447-0500 mcwatts@wattsguerra.com hwatts@wattsguerra.com ssanford@wattsguerra.com jwhite@wattsguerra.com Representing the Plaintiffs</p> <p>13 BEASLEY ALLEN LAW FIRM</p> <p>14 BY: W. ROGER SMITH, III, ESQ. (In person)</p> <p>15 118 Commerce Street Montgomery, Alabama 36104 (334) 954-7555 roger.smith@beasleyallen.com Representing the Plaintiffs</p> <p>18 THE LANIER LAW FIRM</p> <p>19 BY: CATHERINE HEACOX, ESQ. (Zoom)</p> <p>20 BY: CRISTINA DELISE, ESQ. (Zoom)</p> <p>21 10940 West Sam Houston Parkway North Suite 100 Houston, Texas 77064 (713) 659-5200 catherine.heacox@lanierlawfirm.com cristina.delise@lanierlawfirm.com Representing the Plaintiffs</p>	<p>Page 4</p> <p>1 APPEARANCES: (Cont'd.)</p> <p>2</p> <p>3 KELLER POSTMAN LLC</p> <p>4 BY: ASHLEY BARRIERE, ESQ. (Zoom)</p> <p>5 BY: AMANDA HUNT, ESQ. (Zoom)</p> <p>6 BY: ROSEANN ROMANO, ESQ. (Zoom)</p> <p>7 BY: J.J. SNIDOW, ESQ. (Zoom)</p> <p>8 BY: REBECCA KING, ESQ. (Zoom)</p> <p>9 150 North Riverside Plaza Suite 4100 Chicago, Illinois 60606 (312) 741-5220 ashley.barriere@kellerpostman.com amanda.hunt@kellerpostman.com roseann.romano@kellerpostman.com jj.snidow@kellerpostman.com Rebecca.king@kellerpostman.com Representing the Plaintiffs</p> <p>14 HOLWELL, SHUSTER & GOLDBERG, LLP</p> <p>15 BY: EILEEN MONAGHAN DELUCIA, ESQ. (Zoom)</p> <p>16 BY: DANIEL SULLIVAN, ESQ. (Zoom)</p> <p>17 425 Lexington Avenue New York, New York 10017 (646) 837-5151 edelucia@hsgllp.com Dsullivan@hsgllp.com Representing the Plaintiffs</p>
<p>Page 3</p> <p>1 APPEARANCES: (Cont'd.)</p> <p>2</p> <p>3 THE LANIER FIRM</p> <p>4 BY: EVAN M. JANUSH, ESQ. (Zoom)</p> <p>5 126 East 56th Street 6th Floor New York, New York 10022 (212) 421-2800 evan.janush@lanierlawfirm.com Representing the Plaintiffs</p> <p>8 KRAUSE & KINSMAN LAW FIRM</p> <p>9 BY: TRICIA CAMPBELL, ESQ. (Zoom)</p> <p>10 4747 Grand Avenue Suite 300 Kansas City, Missouri 64112 (816) 200-2900 tcampbell@krauseandkinsman.com Representing the Plaintiffs</p> <p>14 TRACEY FOX & WALTERS</p> <p>15 BY: SEAN P. TRACEY, ESQ. (Zoom)</p> <p>16 BY: LAWRENCE TRACEY, ESQ. (Zoom)</p> <p>17 440 Louisiana Street Unit 1901 Houston, Texas 77002 (713) 489-6304 stracey@traceylawfirm.com ltracey@traceylawfirm.com Representing the Plaintiffs</p>	<p>Page 5</p> <p>1 APPEARANCES: (Cont'd.)</p> <p>2</p> <p>3 HOLWELL, SHUSTER & GOLDBERG, LLP</p> <p>4 BY: EILEEN MONAGHAN DELUCIA, ESQ. (Zoom)</p> <p>5 BY: DANIEL SULLIVAN, ESQ. (Zoom)</p> <p>6 425 Lexington Avenue New York, New York 10017 (646) 837-5151 edelucia@hsgllp.com Dsullivan@hsgllp.com Representing the Plaintiffs</p> <p>9 SKADDEN, ARPS, SLATE, MEAGHER & FLOM LLP</p> <p>10 BY: ALLISON M. BROWN, ESQ. (In person)</p> <p>11 BY: JOSEPH A. CARUSO, ESQ. (In person)</p> <p>12 One Manhattan West New York, New York 10001 (212) 735-3000 allison.brown@skadden.com joseph.caruso@skadden.com Representing Johnson & Johnson Consumer Inc. (JJCI)</p> <p>16 BUTLER SNOW LLP</p> <p>17 BY: DAVID M. COHEN, ESQ. (Zoom)</p> <p>18 BY: RAQUEL LUCAS, ESQ. (Zoom)</p> <p>19 810 Seventh Avenue Suite 1105 New York, New York 10019 (646) 606-2996 david.cohen@butlersnow.com raquel.lucas@butlersnow.com Representing Johnson & Johnson Consumer Inc. (JJCI)</p>

Page 6

1 APPEARANCES: (Cont'd.)
2
3 KING & SPALDING LLP
4 BY: LUKE BOSSO, ESQ.
5 (Zoom)
6 1700 Pennsylvania Avenue, NW
7 Suite 900
8 Washington, D.C. 20006
9 (202) 737-0500
10 lboss@kslaw.com
11 Representing the Defendant, Walmart,
12 Inc., and Wal-Mart Stores, Inc.
13
14 BARNES & THORNBURG LLP
15 BY: NADINE S. KOHANE, ESQ.
16 (Zoom)
17 390 Madison Avenue
18 12th Floor
19 New York, New York 10017
20 (646) 746-2000
21 nkohane@btlaw.com
22 Representing CVS Pharmacy, Inc., CVS
23 Health Corporation, Walgreen Co.
24 Walgreens Co., and Walgreens Boots
Alliance, Inc.

16 BARNES & THORNBURG LLP
17 BY: SANDRA KO, ESQ.
18 (Zoom)
19 BY: DEANNA LEE, ESQ.
20 (Zoom)
21 555 12th Street N.W.
22 Suite 1200
23 Washington, D.C. 20004
24 (202) 289-1313
sko@btlaw.com
deanna.lee@btlaw.com
Representing the Defendant, Costco
Wholesale Corporation

Page 7

1 APPEARANCES: (Cont'd.)
2
3 STONE DEAN LLP
4 BY: JOSEPH A. LARA, ESQ.
5 (Zoom)
6 1052 Oxnard Street
7 Woodland Hills, California 91367
8 (818) 999-2232
9 jlara@stonedeanlaw.com
10 Representing the Defendant, The Kroger
11 Co.
12
13 MORRISON & FOERSTER LLP
14 BY: LINDSEY HAAS CAIN, ESQ.
15 (Zoom)
16 4200 Republic Plaza
17 370 Seventeenth Street
18 Denver, Colorado 80202
19 (303) 592-1500
20 lcain@mfo.com
21 Representing the Defendant, Target
22 Corporation
23
24 HAIGHT BROWN & BONESTEEL LLP
BY: KATIE TRINH, ESQ.
(Zoom)
555 South Flower Street, 45th Floor
Los Angeles, California 90071
213.547.8000
ktrinh@hbblaw.com
Representing the Defendant, Big Lots
Stores-PNS, LLC

20 DUANE MORRIS LLP
21 BY: SEAN K. BURKE, ESQ.
22 (Zoom)
23 901 New York Avenue N.W.
24 Suite 700 East
Washington, DC 2000
202.776.5236
sburke@duanemorris.com
Representing the Defendant, Dollar
General Corporation

Page 8

1 APPEARANCES: (Cont'd.)
2
3
4 ALSO PRESENT:
5 VIDEOTAPE TECHNICIANS:
6 Henry Marte - Golkow
7 (In person)
8 Danny Ortega - Golkow
9 (In person)
10 LITIGATION TECHNICIAN:
11 Erik Thorsnes - U.S. Legal
12 (In person)
13 Jason Short - IT
14 (Zoom)
15
16
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Page 9

1 - - -
2 INDEX
3 - - -
4
5 Testimony of:
6 ALEX KOLEVZON, M.D.
7
8 By Mr. Watts 35, 617
9 By Ms. Brown 593
10
11
12
13 - - -
14 EXHIBITS
15 - - -
16 NO. DESCRIPTION PAGE
17 KOLEVZON
18 No. 400 35
19 APAP MDL AMENDED DEPOSITION
20 NOTICE ALEX KOLEVZON.PDF
21 KOLEVZON
22 No. 401 37
23 APAP MDL-RESPONSES AND
24 OBJECTIONS TO PLAINTIFFS'
NOTICE OF DEPOSITION TO
DR. KOLEVZON.PDF

Confidential Subject to Protective Order

Page 10

1	- - -	
2	EXHIBITS (Cont'd.)	
3	- - -	
4		
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6	KOLEVZON	
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8	KOLEVZON	
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Page 11

- - -

EXHIBITS (Cont'd.)

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KOLEVZON		
No. 411	RESPONSE: A RESPONSE TO BLAXILL, BASKIN & SPITZER (Croen)	227
KOLEVZON		
No. 414	20070400-KOLEVZON, GROSS & REICHENBERG-2007- PERINATAL AND FACTORS FOR AUTISM A.PDF	109

Page 12

1	- - -	
2	EXHIBITS (Cont'd.)	
3	- - -	
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7	No. 415	20071100- JOHNSON, 341
8		IDENTIFICATION AND _
9		EVALUATION OF _
10	KOLEVZON	
11	No. 416	20080000-MOY AND NADLER- 342
12		ADVANCES IN BEHAVIORAL _
13		GENETICS MOUSE MODELS _
14	KOLEVZON	
15	No. 417	2090100-THE RISE IN 114
16		AUTISM AND _
17		THE ROLE OF AGE AT _
18		DIAGNOSIS- _
19		EPIDEMIOLOGY.PDF
20	KOLEVZON	
21	No. 418	20090109-CONE, NEW STUDY- 240
22		AUTISMLINKED _
23		TO ENVIRONMENT- _
24		SCIENTIFIC AMERICAN.PDF

Page 13

1	- - -	
2	EXHIBITS (Cont'd.)	
3	- - -	
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10	KOLEVZON	
11	No. 424	20120000-MOUNT SINAI CHILDREN'S ENVIRONMENTAL HEALTH CENTER PUBLISHES A LIST OF THE TOP TEN TOXIC CHEMICALS SUSPECTED TO CAUSE AUTISM AND LEARNING 534
12		
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Page 14

1 - - -

2 EXHIBITS (Cont'd.)

3 - - -

4

5 NO. DESCRIPTION PAGE

6 KOLEVZON

7 No. 429 20120701-PUELO ET AL.- 353

8 ADVANCING PATERNAL AGE AND

9 SIMPLEX AUTISM.PDF

10 KOLEVZON

11 No. 430 20130000-NEUROBIOLOGY OF 289

12 MENTAL ILLNESS, CHAPTER 77-

13 AUTISM SPECTRUM DISORDERS-

14 ALEXANDER KOLEVZON, A TING

15 WANG, DAVID GRODBERG,

16 JOSEPH BUXBAUM.PDF

17 KOLEVZON

18 No. 431 2013000-THE NEUROSCIENCE OF 502

19 AUTISM SPECTRUM, CHAPTER 1.6

20 CURRENT TRENDS IN THE

21 PHARMACOLOGICAL TREATMENT OF

22 AUTISM SPECTRUM DISORDERS-

23 ALEXANDER KOLEVZON.PDF

24 KOLEVZON

No. 433 20140300-MAENNER, POTENTIAL 176

IMPACT OF DSM-V CRITERIA

ON AUTISM SPECTRUM DISORDER

PREVALENCE ESTIMATES-PMC.PDF

Page 16

1 - - -

2 EXHIBITS (Cont'd.)

3 - - -

4

5 NO. DESCRIPTION PAGE

6 KOLEVZON 183

7 No. 443 20150600-ZANDER,

8 THE NEW DSM-V,

9 IMPAIRMENT CRITERION-A

10 CHALLENGE TO EARLY AUTISM

11 SPECTRUM DISORDER

12 DIAGNOSIS, J AUTISM

13 DEV DISCORD (2015)

14 45-3634-3643.PDF

15 KOLEVZON 546

16 No. 445 20150904-TAVASSOLI,

17 KOLEVZON ET AL

18 2016-MEASURING SENSORY

19 REACTIVITY IN AUTISM

20 SPECTRUM.PDF

21 KOLEVZON 187

22 No. 447 20160216-BENNETT, A META-

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24 DIAGNOSES IN RELATION TO

DSM-IV AND DSM-IV-TR-

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KOLEVZON 375

No. 451 20160908-AUTISM AND PRENATAL

ENDOCRINE DISRUPTORS

(A-PED)-

FOA-FUNDING OPPORTUNITY

ANNOUNCEMENT-PAR-14-203.PDF

Page 15

EXHIBITS (Cont'd.)

NO.	DESCRIPTION	PAGE
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KOLEVZON		181
No. 437	437-20140621-STURMEY, THE EFFECTS OF DSM5 AUTISM DIAGNOSTIC CRITERIA ON NUMBER OF INDIVIDUALS DIAGNOSED WITH AUTISM SPECTRUM DISORDERS- A SYSTEMATIC REVIEW.PDF	
KOLEVZON		258
No. 438	20140800 GAULGER, MOST GENETIC RISK FOR AUTISM RESIDES_WITH_COMMON_V.PDF	

Page 17

1	- - -	
2	EXHIBITS (Cont'd.)	
3	- - -	
4		
5	NO.	DESCRIPTION PAGE
6	KOLEVZON	
7	No. 452	20160908-AUTISM AND PRENATAL 349
8		ENDOCRINE DISRUPTORS
9		(A-PED)-
10		1701ES026904-01-REICHENBERG-
11		2016-2021-ABSTRACT.PDF
12	KOLEVZON	
13	No. 453	20170000-BOOK-MOUNT SINAI 321
14		EXPERT GUIDES-CHPT
15		25-ANGARITA
16		& KOLEVZON, AUTISM SPECTRUM
17		DISORDER, 225-232.PDF
18	KOLEVZON	
19	No. 456	20171116 VIDEO KOLEVZON_ 539
20		ADVANCES IN AUTISM_
21		CONFERENCE
22		_2017_ALEX_CLIP_3.MP4
23	KOLEVZON	
24	No. 458	20171116 VIDEO KOLEVZON_ 542
		ADVANCES IN AUTISM_
		CONFERENCE
		_2017_ALEX_CLIP_5.MP4
	KOLEVZON	
	No. 459	20171116 VIDEO KOLEVZON_ 439
		ADVANCES IN AUTISM_
		CONFERENCE
		_2017_ALEX_CLIP_6.MP4

Page 18			Page 20		
1	- - -		1	- - -	
2	EXHIBITS (Cont'd.)		2	EXHIBITS (Cont'd.)	
3	- - -		3	- - -	
4			4		
5	NO. DESCRIPTION PAGE		5	NO. DESCRIPTION PAGE	
6	KOLEVZON		6	KOLEVZON	
7	No. 460 20171116_VIDEO_KOLEVZON_	401	7	No. 474 20180403-KOLEVZON BLOG-ON	362
8	ADVANCES IN AUTISM_		8	BIOLOGY DIAGNOSIS AND	
9	CONFERENCE		9	TREATMENT OF AUTISM_THE REAL	
10	_2017_ALEX_CLIP_7.MP4		10	STORY.PDF	
11	KOLEVZON		11	KOLEVZON	
12	No. 463 20170712-VIKTORIN ET AL.-	357	12	No. 475 20180427-BAIO. PREVALENCE OF	190
13	ANTIDEPRESSANT		13	AUTISM SPECTRUM	
14	MEDICATION.PDF		14	DISORDER AMONG	
15	KOLEVZON		15	CHILDREN AGED 8 YEARS-AUTISM	
16	No. 464 20180000-MT. SINAI	426	16	AND DEVELOPMENTAL	
17	NEWSLETTER-		17	DISABILITIES	
18	DEVELOPING PERSONALIZED		18	MONITORING NETWORK,	
19	APPROACHES TO THE TREATMENT		19	11 SITES, UNITED STATES,	
20	OF AUTISM-KOLEVZON-2017-		20	APRIL 27, 2018,	
21	2023.PDF		21	67(6); 1-23.PDF	
22	KOLEVZON		22	KOLEVZON	
23	No. 465 20180504-CARTOLANO,	192	23	No. 476 20180504-CARTOLANO,	192
24	UNDER THE		24	UMBRELLA-REDEFINING THE	
	CHARNEY & NESTLER'S	359		SPECTRUM OF AUTISM.PDF	
	NEUROBIOLOGY OF			KOLEVZON	
	MENTAL ILLNESS			No. 477 20180619-FONBOMME-EDITORIAL	193
	5TH EDITION			THE RISING PREVALENCE OF	
	(CHARNEY)			AUTISM-FOMBONNE-2018-JOURNAL	
				OF CHILD PSYCHOLOGY AND	
				PSYCHIATRY-WILEY ONLINE	
				LIBRARY.PDF	

Page 19			Page 21		
1	- - -		1	- - -	
2	EXHIBITS (Cont'd.)		2	EXHIBITS (Cont'd.)	
3	- - -		3	- - -	
4			4		
5	NO. DESCRIPTION PAGE		5	NO. DESCRIPTION PAGE	
6	KOLEVZON		6	KOLEVZON	
7	No. 466 20180110-ACETAMINOPHEN USE	618	7	No. 479 20181108-REPORT OF ALEXANDER	107
8	DURING PREGNANCY ASSOCIATED		8	KOLEVZON-DANIELS FEASEL V.	
9	WITH ELEVATED RATE		9	FOREST PHARMACEUTICALS.PDF	
10	OF LANGUAGE		10	KOLEVZON	
11	DELAY IN GIRLS. MOUNT SINAI		11	No. 480 20181207-KOLEVZON-	333
12	RESEARCHERS FIND_MOUNT SINAI		12	DEPO-SULLENS	
13	-NEW YORK.PDF		13	V. WALMART.PDF	
14	KOLEVZON		14	KOLEVZON	
15	No. 468 20180223-KOLEVZON DEPO-	429	15	No. 481 20190000-ROGERS,	172
16	POSTON V. ST. JOHN HOSPITAL		16	TOBY (THESIS).	
17	.PDF		17	THE POLITICAL ECONOMY OF	
18	KOLEVZON		18	AUTISM.PDF	
19	No. 469 20180228_VIDEO_KOLEVZON-	308	19	KOLEVZON	
20	CLINICAL TRIALS_IN_PMS_-		20	No. 482 20190610-ADDO	530
21	CLIP_1.MPF		21	ACETAMINOPHEN	
22	KOLEVZON		22	USE-DNA METHYLATION IN THE	
23	No. 470 20180228_VIDEO_KOLEVZON-	436	23	PLACENTA.PDF	
24	CLINICAL TRIALS_IN_PMS_-		24	KOLEVZON	
	CLIP_5.MPF			No. 484 20190610-ADDO	525
	KOLEVZON			PLACENTAL DNA	
	No. 472 20180228 VIDEO KOLEVZON_	301		METHYLATION	
	CLINICAL MP4			LEVELS AT CYP2E1	
				(Zhu)	

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Page 22

1	- - -	
2	EXHIBITS (Cont'd.)	
3	- - -	
4		
5	NO.	DESCRIPTION PAGE
6	KOLEVZON	
7	No. 485	2020000-PREM S. MILLONIG JH, DICICCO-BLOOM E. DYSREGULATION OF NEURITE OUTGROWTH AND CELL MIGRATION IN AUTISM AND OTHER NEURODEVELOPMENTAL DISORDERS. ADV NEUROBIOL. 2020;25- 109-153 .PDF 417
13	KOLEVZON	
14	No. 486	20200804-KOLEVZON DEPOSITION- PURDIE V. MERCY MEDICAL.PDF 352
17	KOLEVZON	
18	No. 489	20201007 VIDEO KOLEVZON_ THE BENEFITS OF GENETIC TESTING IN AUTISM_CLIP_2.MP4 542
20	KOLEVZON	
21	No. 490	20210100-KARLA COMPARISON OF THE DIAGNOSTIC CRITERIA FOR ASD USING DSM AND ICD-A STUDY FROM NORTH INDIA.PDF 194

Page 23

EXHIBITS (Cont'd.)

NO.	DESCRIPTION	PAGE
KOLEVZON No. 491	20220000-PRENATAL AND PERINATAL METABOLIC RISK FACTORS FOR AUTISM (KATZ)	127
KOLEVZON No. 494	20220000-TEXTBOOK OF AUTISM SPECTRUM DISORDERS (2ND EDITION). CHPT 11-KAPRA, KOLEVZON, REICHENBERG & GROSS, PRENATAL PERINATAL AND PARENTAL RISK FACTORS.PDF	41
KOLEVZON No. 496	20220117-DATTARO, FDA CITES HAIR-BASED AUTISM DIAGNOSTIC AID AS BREAKTHROUGH SPECTRUM AUTISM RESEARCH NEWS.PDF	379
KOLEVZON No. 498	20220407-CDC-KEY FINDINGS POTENTIAL IMPACT OF DSM-V CRITERIA ON ASD PREVALENCE_ AUTISM_CDC.PDF	195

Page 24

1 - - -

2 EXHIBITS (Cont'd.)

3 - - -

4

5 NO. DESCRIPTION PAGE

6 KOLEVZON

7 No. 500 20220516-MOUNT SINAI RECEIVES LANDMARK GIFT FROM ROYALTY PHARMA TO ADVANCE HEALTH EQUITY. MOUNT SINAI-NEW YORK.PDF 554

8

9

10 KOLEVZON

11 No. 501 20220516-OUR HISTORY-ROYALTY PHARMA.PDF 555

12

13 KOLEVZON

14 No. 502 20220516-TOP OWNERS OF J&J RESIZE.PDF 555

15 Web Printout

16 KOLEVZON

17 No. 503 20220516-TOP OWNERS OF ROYALTY PHARMA PLC.PDF 555

18 Web Printout

19

20 KOLEVZON

21 No. 504 20220603-DR KOLEVZON EXPERT REPORT PALMQUIST V HAIN.PDF 411

22

23

24

Page 25

1	- - -	
2	EXHIBITS (Cont'd.)	
3	- - -	
4		
5	NO.	DESCRIPTION PAGE
6	KOLEVZON	
7	No. 506	20220904-KOLVEZON'S 568
8		CORRESPONDENCE FILE
9		(WITH TILLERY)
		[KOLEVZON_000001-108]
		.PDF
10	KOLEVZON	
11	No. 510	20230000-MT. SINAI- 553
12		OUR PARTNERS-
13		MOUNT SINAI INNOVATION
		PARTNERS.PDF
14	KOLEVZON	
15	No. 511	20230117-LASALLE, JANINE M. 170
16		"EPIGENOMIC
17		SIGNATURES REVEAL
18		MECHANISTIC CLUES AND
		PREDICTIVE MARKERS
		FOR AUTISM SPECTRUM
		DISORDER." .PDF
19	KOLEVZON	
20	No. 512	20230216-AM-PALMOUIST V. THE 433
21		HAIN CELESTIAL GROUP,
		INC.PDF
22	KOLEVZON	
23	No. 513	20230216-AM-PALMOUIST 332
24		V. THE HAIN CELESTIAL
		GROUP, INC.PDF

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Page 26

1 - - -

2 EXHIBITS (Cont'd.)

3 - - -

4

5 NO. DESCRIPTION PAGE

6 KOLEVZON

7 No. 514 20230225-KHACHADOURIAN, KOLEVZON COMORBIDITIES IN AUTISM SPECTRUM DISORDER AND THEIR ETIOLOGIES-PMC.PDF 391

8

9

10 KOLEVZON

11 No. 520 UNDATED-MT. SINAI WEBSITE- AUTISM SPECTRUM DISORDER INFORMATION MOUNT SINAI-NEW YORK.PDF 370

12

13

14 KOLEVZON

15 No. 521 UNDATED-MOUNT SINAI AWARDED \$25 MILLION TO STUDY THE ENVIRONMENT'S INFLUENCE ON PEOPLE'S HEALTH THROUGHOUT THEIR LIFETIMES - MOUNT SINAI-NEW YORK.PDF 389

16

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19 KOLEVZON

20 No. 522 UNDATED-ADVANCES IN THE GENETICS OF AUTISM -CLIP_1.MP4 294

21

22 KOLEVZON

23 No. 525 UNDATED-KOLEVZON BILLING (KOLEVZON 000102_108.PDF 580

24

Page 27

1	- - -	
2	EXHIBITS (Cont'd.)	
3	- - -	
4		
5	NO.	DESCRIPTION PAGE
6	KOLEVZON	
7	No. 526	UNDATED-(20180515) KOLEVZON HUDDLESTON DEPO.PDF 336
8		
9	KOLEVZON	
10	No. 528	JANSSEN R&D RESEARCH PAYMENTS TO MOUNT SINAI HOSPITAL-OPENPAYMENTS_RESIZE.PDF 551
11		
12	KOLEVZON	
13	No. 530	FEDERAL RULES OF CIVIL PROCEDURE (DECEMBER 1, 2017) 54
14		
15	KOLEVZON	455
16	No. 532	20111100-PINTO-MARTIN, PREVALENCE OF AUTISM SPECTRUM DISORDER IN ADOLESCENTS BORN WEIGHING 2000 GRAMS-PMC.PDF
17		
18		
19		
20	KOLEVZON	
21	No. 542	UNDATED-E-MAIL RE PUBLICATION DATE OF HOLLANDER BOOK, 2ND EDITION.PDF 41
22		
23		
24		

Page 28

- - -

EXHIBITS (Cont'd.)

- - -

NO.	DESCRIPTION	PAGE
KOLEVZON		
No. 543	ASD PREVALENCE OVER TIME.PDF (Demonstrative)	131
KOLEVZON		
No. 544	E-MAIL THREAD 9/22/22 SUBJECT WHITE PAPER FOR SCIENTISTS KOLEVZON 000109-.PDF	569
KOLEVZON		
No. 545	KOLEVZON'S EXPLANATION FOR RISING PREVALENCE RATES OF ASD.PDF (Demonstrative)	136
KOLEVZON		
No. 546	BOCCUTO-PHENOTYPE VARIABILITY IN PHELAN-MCDERMID SYNDROME AND ITS PUTATIVE LINK TO ENVIRONMENTAL FACTORS-PMC.PDF	306

Page 29

EXHIBITS (Cont'd.)

NO.	DESCRIPTION	PAGE
KOLEVZON No. 547	20181029-SALDARRIAGA, INCREASED SEVERITY OF FRAGILE X SPECTRUM DISORDERS IN THE AGRICULTURAL COMMUNITY OF RICAURTE COLOMBIA .PDF	296
KOLEVZON No. 548	(Chung) MP4	277
KOLEVZON No. 549	(Chung) MP4	263
KOLEVZON No. 550	(Chung) MP4	282
KOLEVZON No. 556	HARVARD-20100500-EARLY EXPERIENCES CAN ALTER GENE EXPRESSION AND AF.PDF	488

<p style="text-align: right;">Page 34</p> <p>1 - - -</p> <p>2 THE VIDEOGRAPHER: We are</p> <p>3 now on the record.</p> <p>4 My name is Danny Ortega.</p> <p>5 I'm the legal videographer for</p> <p>6 Golkow Litigation Services.</p> <p>7 Today's date is</p> <p>8 September 1st, 2023, and the time</p> <p>9 is 8:31 a.m.</p> <p>10 This video deposition is</p> <p>11 being held at 503 Washington</p> <p>12 Avenue, Kingston, New York, in the</p> <p>13 matter of Tylenol,</p> <p>14 Acetaminophen/Tylenol ASD-ADHD</p> <p>15 products liability litigation MDL.</p> <p>16 The deponent today is Alex</p> <p>17 Kolevzon.</p> <p>18 All counsel will be noted on</p> <p>19 the stenographic record.</p> <p>20 The court reporter today is</p> <p>21 Michelle Gray and will now swear</p> <p>22 in the witness.</p> <p>23 - - -</p> <p>24</p>	<p style="text-align: right;">Page 36</p> <p>1 Q. Let me put up on the screen</p> <p>2 Exhibit 400. This is the amended notice</p> <p>3 for your deposition.</p> <p>4 On Page 2 it shows the</p> <p>5 location at the Best Western Plus & Venue</p> <p>6 here in Kingston, New York; is that</p> <p>7 right?</p> <p>8 A. Yes.</p> <p>9 Q. And as I understand, we're</p> <p>10 in Kingston, New York, because we're near</p> <p>11 various parties' lake houses in here in</p> <p>12 the Catskills, right?</p> <p>13 A. Yeah, minus the lake.</p> <p>14 Q. Minus the lake? Okay.</p> <p>15 A. No lake.</p> <p>16 Q. But we're in what's known as</p> <p>17 the Catskills?</p> <p>18 A. Right.</p> <p>19 Q. Okay. Great.</p> <p>20 Attached to that notice is</p> <p>21 what's known as a subpoena duces tecum.</p> <p>22 If we go to Page 7, it asks for documents</p> <p>23 to be produced.</p> <p>24 Do you see that, sir?</p>
<p style="text-align: right;">Page 35</p> <p>1 - - -</p> <p>2 ... ALEX KOLEVZON, M.D.,</p> <p>3 having been first duly sworn, was</p> <p>4 examined and testified as follows:</p> <p>5 - - -</p> <p>6 EXAMINATION</p> <p>7 - - -</p> <p>8 BY MR. WATTS:</p> <p>9 Q. What is your name?</p> <p>10 A. Alex Kolevzon.</p> <p>11 Q. You are a medical doctor?</p> <p>12 A. I am.</p> <p>13 Q. Clinical psychiatrist?</p> <p>14 A. I am.</p> <p>15 Q. Okay. I'm here to take your</p> <p>16 deposition because you've been designated</p> <p>17 as an expert witness by the defendants in</p> <p>18 this case.</p> <p>19 Do you understand that?</p> <p>20 A. Yes.</p> <p>21 (Document marked for</p> <p>22 identification as Exhibit</p> <p>23 Kolevzon 400.)</p> <p>24 BY MR. WATTS:</p>	<p style="text-align: right;">Page 37</p> <p>1 A. Yes.</p> <p>2 Q. And without reading it all</p> <p>3 in, Number 1 asks for a copy of your CV,</p> <p>4 together with a list of papers you've</p> <p>5 written over the last ten years; is that</p> <p>6 right?</p> <p>7 A. Yes.</p> <p>8 Q. And if we go to Exhibit 401.</p> <p>9 (Document marked for</p> <p>10 identification as Exhibit</p> <p>11 Kolevzon 401.)</p> <p>12 BY MR. WATTS:</p> <p>13 Q. This is the defendants'</p> <p>14 responses. And we can see on Page 3 of</p> <p>15 17 that in response to that Request</p> <p>16 Number 1, the defendants refer us to your</p> <p>17 expert report and Rule 26 disclosures</p> <p>18 dated July 21 of 2023; is that right?</p> <p>19 A. That's what the response</p> <p>20 says, yes.</p> <p>21 Q. Okay. And I want to take</p> <p>22 you to that.</p> <p>23 (Document marked for</p> <p>24 identification as Exhibit</p>

<p>Page 38</p> <p>1 Kolevzon 405.)</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Exhibit 405.</p> <p>4 Is Exhibit 405, Exhibit 3 to</p> <p>5 your disclosure, if you go to the second</p> <p>6 page, your curriculum vitae that was</p> <p>7 provided to us in this case?</p> <p>8 MS. BROWN: And, Mr. Watts,</p> <p>9 if we wanted to give the witness</p> <p>10 hard copies of what you're pulling</p> <p>11 up, the numbers correspond to the</p> <p>12 box?</p> <p>13 MR. WATTS: They do.</p> <p>14 MS. BROWN: Okay.</p> <p>15 MR. WATTS: Everything is</p> <p>16 premarked. It's 400 through 568,</p> <p>17 and you're welcome to pull them</p> <p>18 out. I just figured I'd give you</p> <p>19 the use of them so we don't have</p> <p>20 to walk across the room every</p> <p>21 time.</p> <p>22 MS. BROWN: Yep.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. Is Exhibit 405 a true and</p>	<p>Page 40</p> <p>1 Publication Number 120, which is a paper</p> <p>2 with first author of Levy, and it's dated</p> <p>3 July 16th of 2023; is that right?</p> <p>4 A. Yes.</p> <p>5 Q. So that publication occurred</p> <p>6 about five days before your disclosure in</p> <p>7 this case on July the 21st; is that</p> <p>8 right?</p> <p>9 A. Yes.</p> <p>10 Q. Okay. And right under the</p> <p>11 publications there's a section dealing</p> <p>12 with books and chapters in books; is that</p> <p>13 right?</p> <p>14 A. Yes.</p> <p>15 Q. And if we continue from</p> <p>16 Page 18 to Page 19, Page 20, at the</p> <p>17 bottom of Page 19, the last book that's</p> <p>18 listed is one by Shapiro, Gibbs, and</p> <p>19 yourself, and it's published in 2022; is</p> <p>20 that right?</p> <p>21 A. That's the reference. I</p> <p>22 think it's probably not available yet.</p> <p>23 Q. Okay. Now I want to go to</p> <p>24 the Elmo for a second. And if you could,</p>
<p>Page 39</p> <p>1 correct copy of the curriculum vitae that</p> <p>2 was provided to us in this case, together</p> <p>3 with the Rule 26 disclosure, on July 21,</p> <p>4 2023?</p> <p>5 A. This is certainly a copy of</p> <p>6 my CV. I don't know whether it's the</p> <p>7 most up-to-date version.</p> <p>8 Q. Well, let me ask you about</p> <p>9 that. If we go to Page 8 of the CV.</p> <p>10 MS. BROWN: Here is the CV,</p> <p>11 405. Is that what you have?</p> <p>12 THE WITNESS: Yeah.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. At the bottom, we see a list</p> <p>15 of publications that are numbered</p> <p>16 starting with 1 on Page 8; is that right?</p> <p>17 A. Yes.</p> <p>18 Q. And if we go all the way,</p> <p>19 just flip, Page 8, 9, 10, 11, 12, all the</p> <p>20 way to 18, we see your publications and</p> <p>21 the number growing one at a time until we</p> <p>22 get to Page 18.</p> <p>23 A. Yes.</p> <p>24 Q. And it goes through</p>	<p>Page 41</p> <p>1 tell me whether or not the second edition</p> <p>2 of the Textbook of Autism Spectrum</p> <p>3 Disorders, by Hollander, Hagerman and</p> <p>4 Ferretti is listed under your books and</p> <p>5 book chapters.</p> <p>6 A. I don't believe that it is.</p> <p>7 Q. Okay. And just for</p> <p>8 references, going back to the presenter,</p> <p>9 Exhibit 542 is an e-mail to one of my</p> <p>10 partners by the publisher of this book.</p> <p>11 (Document marked for</p> <p>12 identification as Exhibit</p> <p>13 Kolevzon 542.)</p> <p>14 BY MR. WATTS:</p> <p>15 Q. 542.</p> <p>16 (Document marked for</p> <p>17 identification as Exhibit</p> <p>18 Kolevzon 494.)</p> <p>19 MS. BROWN: We'll just give</p> <p>20 you a chance to get the hardcopy</p> <p>21 if you want it, Doctor.</p> <p>22 MR. WATTS: I don't think</p> <p>23 he's going to need this one. It's</p> <p>24 real -- pretty short.</p>

<p style="text-align: right;">Page 42</p> <p>1 BY MR. WATTS:</p> <p>2 Q. Anyway, if this book, second</p> <p>3 edition of the Textbook of Autism</p> <p>4 Spectrum Disorders, it tells us was</p> <p>5 published on March 15th of 2022.</p> <p>6 Do you see that, sir?</p> <p>7 A. Yes.</p> <p>8 Q. If we go to this book, you</p> <p>9 wrote a chapter in this book.</p> <p>10 A. I didn't write a chapter. I</p> <p>11 was a co-author on a chapter.</p> <p>12 Q. Co-author? And if we go to</p> <p>13 Chapter 11, we can see Chapter 11 is</p> <p>14 something entitled "Prenatal, Perinatal,</p> <p>15 and Parental Risk Factors."</p> <p>16 And you are listed as a</p> <p>17 co-author of this book chapter of the</p> <p>18 second edition of the Textbook of Autism</p> <p>19 Spectrum Disorders that was published in</p> <p>20 March of 2022; is that right?</p> <p>21 A. I'm listed as a co-author,</p> <p>22 yes.</p> <p>23 Q. And in the chapter where you</p> <p>24 are a co-author, part of what is written</p>	<p style="text-align: right;">Page 44</p> <p>1 Q. You are listed as a</p> <p>2 co-author on that, right?</p> <p>3 A. Yes. Although I didn't have</p> <p>4 the opportunity to review this before it</p> <p>5 was published.</p> <p>6 Q. And if we can go to</p> <p>7 Page 187. On Page 187, this chapter</p> <p>8 where you are a co-author says, "We</p> <p>9 present plausible biological mechanisms</p> <p>10 linking those risk factors to ASD and</p> <p>11 suggest some directions for future</p> <p>12 research."</p> <p>13 Did I read that correctly?</p> <p>14 A. That's what the person who</p> <p>15 wrote the chapter wrote, yes.</p> <p>16 Q. And that's what's in the</p> <p>17 chapter where you are listed as a</p> <p>18 co-author, right?</p> <p>19 A. Yes. Although I don't agree</p> <p>20 with everything that was written in the</p> <p>21 chapter.</p> <p>22 Q. And if we go to Page 191,</p> <p>23 the chapter where you are a co-author,</p> <p>24 published in March of 2022, has a section</p>
<p style="text-align: right;">Page 43</p> <p>1 is very "strong evidence that</p> <p>2 nonheritable prenatal or perinatal events</p> <p>3 are likely to have an etiological role,"</p> <p>4 and it cites to Bristol in 1996; is that</p> <p>5 right?</p> <p>6 MS. BROWN: Counsel, could</p> <p>7 you zoom in a little bit? It's a</p> <p>8 little hard to see on the screen.</p> <p>9 MR. WATTS: I sure can.</p> <p>10 MS. BROWN: Thank you.</p> <p>11 MR. WATTS: Yeah.</p> <p>12 MS. BROWN: Can you see it?</p> <p>13 THE WITNESS: Yeah.</p> <p>14 MS. BROWN: Okay.</p> <p>15 THE WITNESS: I've read this</p> <p>16 chapter.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. And part of what's written</p> <p>19 in the book chapter that you are a</p> <p>20 co-author of is "only half of the risk is</p> <p>21 explained by genetics"; is that right?</p> <p>22 A. That's what was written by</p> <p>23 the person who wrote the article, the</p> <p>24 chapter.</p>	<p style="text-align: right;">Page 45</p> <p>1 on acetaminophen, does it not?</p> <p>2 A. The author of the chapter</p> <p>3 wrote a section on acetaminophen, yes.</p> <p>4 Q. And the chapter where you</p> <p>5 are a co-author of this book chapter,</p> <p>6 published in March of 2022, says, "One</p> <p>7 analgesic and antipyretic medication</p> <p>8 classified in the B category for safety</p> <p>9 during pregnancy has recently been</p> <p>10 demonstrated to be associated with ASD</p> <p>11 and ADHD."</p> <p>12 Do you see that?</p> <p>13 A. That's what the person who</p> <p>14 wrote the chapter believes, yes.</p> <p>15 Q. And it also says, "It has</p> <p>16 also been suggested that acetaminophen</p> <p>17 increases the risk for ASD by causing</p> <p>18 neuronal oxidative stress"; is that</p> <p>19 right?</p> <p>20 A. Well, I don't believe that</p> <p>21 that's correct, but that person who wrote</p> <p>22 the chapter thinks it was correct.</p> <p>23 Q. And you are listed as a</p> <p>24 co-author in the chapter where that</p>

<p style="text-align: right;">Page 46</p> <p>1 statement exists, right, just last year?</p> <p>2 A. I was listed as a co-author</p> <p>3 as a courtesy because I wrote the</p> <p>4 original chapter from the first edition</p> <p>5 of this textbook.</p> <p>6 Q. Now if we go to Page 192.</p> <p>7 MS. BROWN: What exhibit is</p> <p>8 this, Mr. Watts?</p> <p>9 MR. WATTS: 494. It's the</p> <p>10 one that's in your box.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Page 192 says, "These</p> <p>13 findings suggest that metal toxicant</p> <p>14 update [sic] and essential element</p> <p>15 deficiency during specific developmental</p> <p>16 windows increases ASD risk and severity,</p> <p>17 supporting the hypothesis of systemic</p> <p>18 elemental dysregulation in ASD."</p> <p>19 Is that what's said in here?</p> <p>20 A. So the author of this</p> <p>21 chapter is talking about a hypothetical</p> <p>22 mechanism for increasing the risk, yes.</p> <p>23 Q. But are the words that I</p> <p>24 read in the book chapter where you were</p>	<p style="text-align: right;">Page 48</p> <p>1 Q. All right. Let's talk about</p> <p>2 the one in Texas.</p> <p>3 A. Okay.</p> <p>4 Q. That was a case where you</p> <p>5 were designated as an expert witness and</p> <p>6 there was an allegation of heavy metal</p> <p>7 ingestion being causative of autism</p> <p>8 spectrum disorder, right?</p> <p>9 A. That was a case where the</p> <p>10 claim was that a child got autism because</p> <p>11 of eating baby food and that the heavy</p> <p>12 metals in the baby food caused him to</p> <p>13 have --</p> <p>14 Q. And did you disclose that</p> <p>15 you were a co-author in this book chapter</p> <p>16 before you went to federal court and</p> <p>17 testified with respect to that subject?</p> <p>18 MS. BROWN: Objection to the</p> <p>19 form.</p> <p>20 You can answer.</p> <p>21 THE WITNESS: As I said, I</p> <p>22 was unaware that I was a co-author</p> <p>23 on this book chapter.</p> <p>24 BY MR. WATTS:</p>
<p style="text-align: right;">Page 47</p> <p>1 listed as a co-author just last year?</p> <p>2 A. You read the words</p> <p>3 correctly.</p> <p>4 Q. Okay. Now, here is my</p> <p>5 question. When is the last time you</p> <p>6 testified as an expert in a lawsuit?</p> <p>7 MS. BROWN: Objection to</p> <p>8 form.</p> <p>9 THE WITNESS: I testified as</p> <p>10 an expert in a lawsuit in the late</p> <p>11 spring, early summer.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. And that was in Beaumont,</p> <p>14 Texas?</p> <p>15 A. No.</p> <p>16 Q. Where was it?</p> <p>17 A. It was --</p> <p>18 Q. Galveston, Texas.</p> <p>19 A. So you're talking about a</p> <p>20 different case --</p> <p>21 Q. Okay.</p> <p>22 A. -- which was in, I think,</p> <p>23 February of 2023. But that wasn't the</p> <p>24 last time I testified.</p>	<p style="text-align: right;">Page 49</p> <p>1 Q. So you did not disclose it?</p> <p>2 A. There was no -- there'd be</p> <p>3 no way for me to disclose it.</p> <p>4 Q. And if we keep going in this</p> <p>5 book chapter.</p> <p>6 Page 198. There are</p> <p>7 conclusions and future directions, and I</p> <p>8 want to visit with you about what those</p> <p>9 conclusions and those future directions</p> <p>10 are.</p> <p>11 First it says, "A growing</p> <p>12 body of evidence suggests that</p> <p>13 dysregulation within the prenatal</p> <p>14 environment, as well as insults to the</p> <p>15 fetal brain during critical time periods</p> <p>16 of neurodevelopment or during delivery,</p> <p>17 in conjunction with genetic factors, may</p> <p>18 culminate in ASD."</p> <p>19 Is that what's written?</p> <p>20 A. You've read the words</p> <p>21 correctly, yeah.</p> <p>22 Q. And do the words also say,</p> <p>23 "According to current evidence from</p> <p>24 epidemiological studies, several prenatal</p>

<p style="text-align: right;">Page 50</p> <p>1 exposures, parental characteristics, and</p> <p>2 obstetrical conditions consistently</p> <p>3 emerge as potential risk factors for</p> <p>4 ASD."</p> <p>5 Did I read that right?</p> <p>6 A. That is what the author of</p> <p>7 the chapter wrote, yeah.</p> <p>8 Q. And in the chapter where you</p> <p>9 were listed as a co-author, published</p> <p>10 just last year, it says, "Most notably,"</p> <p>11 and then it has a list. You know, in</p> <p>12 that list is prenatal use of</p> <p>13 acetaminophen, right?</p> <p>14 A. So among -- what the author</p> <p>15 is saying, that among the potential risk</p> <p>16 factors, they are proposing that prenatal</p> <p>17 use of acetaminophen is one possibility.</p> <p>18 Q. And in the book chapter,</p> <p>19 which was published last year with your</p> <p>20 name as a co-author, it says, "In</p> <p>21 analyses that adjusted for confounding</p> <p>22 variables, these factors mostly remain</p> <p>23 considerably robust and statistically</p> <p>24 significant."</p>	<p style="text-align: right;">Page 52</p> <p>1 MS. BROWN: Go ahead. You</p> <p>2 can finish, Doctor.</p> <p>3 THE WITNESS: So just to</p> <p>4 kind of clarify this whole</p> <p>5 chapter. There was an initial</p> <p>6 version of the Textbook of Autism</p> <p>7 Spectrum Disorders where I was an</p> <p>8 editor.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. 2011.</p> <p>11 A. 2011. Co-editor along with</p> <p>12 Dr. Hollander. I wrote this chapter with</p> <p>13 my colleagues Dr. Gross and</p> <p>14 Dr. Reichenberg. Subsequently,</p> <p>15 Dr. Gross, I believe, was invited to</p> <p>16 submit an updated version of the chapter</p> <p>17 that he had a student or a research</p> <p>18 associate write, and they included me as</p> <p>19 an author as a courtesy because I had</p> <p>20 written the original paper.</p> <p>21 So there are many things in</p> <p>22 this chapter that are the opinions of the</p> <p>23 first author and perhaps other authors</p> <p>24 but not -- not of me.</p>
<p style="text-align: right;">Page 51</p> <p>1 Did I read that correctly?</p> <p>2 A. You read it. I think the</p> <p>3 keyword in that sentence is "mostly."</p> <p>4 But...</p> <p>5 Q. And on Page 199, the chapter</p> <p>6 ends with something called "Key Points."</p> <p>7 And it says, "There is strong evidence</p> <p>8 that nonheritable prenatal, perinatal,</p> <p>9 and parental events play a role in the</p> <p>10 etiology of autism spectrum disorder."</p> <p>11 Is that what's written?</p> <p>12 A. That's what's written.</p> <p>13 Q. And that's written at the</p> <p>14 end of the chapter where Dr. Alexander</p> <p>15 Kolvezon is listed as a co-author of</p> <p>16 prenatal, perinatal, and parental risk</p> <p>17 factors; is that right?</p> <p>18 A. I was listed as a co-author</p> <p>19 as a courtesy because my --</p> <p>20 Q. And --</p> <p>21 MS. BROWN: Well, let him</p> <p>22 finish. He's not --</p> <p>23 MR. WATTS: I'm sorry. I</p> <p>24 was looking down.</p>	<p style="text-align: right;">Page 53</p> <p>1 Q. So do you make it a practice</p> <p>2 of allowing your name to be used as a</p> <p>3 co-author in articles with which you</p> <p>4 disagree?</p> <p>5 A. Absolutely not. I totally</p> <p>6 regret this, actually.</p> <p>7 Q. And can you provide the jury</p> <p>8 with any explanation as to why it is that</p> <p>9 a CV that had 160 publications and every</p> <p>10 book chapter that your name has ever been</p> <p>11 listed on somehow miraculously did not</p> <p>12 include this book chapter that was</p> <p>13 published just last year?</p> <p>14 MS. BROWN: I object to the</p> <p>15 form of the question as</p> <p>16 argumentative.</p> <p>17 You can answer.</p> <p>18 THE WITNESS: Yeah, if</p> <p>19 you're implying that I</p> <p>20 purposefully omitted this chapter</p> <p>21 from my CV for the purposes of</p> <p>22 this case, that is factually</p> <p>23 incorrect.</p> <p>24 The reason that it's not on</p>

<p style="text-align: right;">Page 54</p> <p>1 my CV is because I was not aware</p> <p>2 of it. And the reason I was not</p> <p>3 aware of it is because it was a</p> <p>4 total oversight on my part, that I</p> <p>5 take responsibility for.</p> <p>6 BY MR. WATTS:</p> <p>7 Q. So let's go to Exhibit 530,</p> <p>8 please.</p> <p>9 (Document marked for</p> <p>10 identification as Exhibit</p> <p>11 Kolevzon 530.)</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Now, the Federal Rules of</p> <p>14 Civil Procedure -- go to Page 2 --</p> <p>15 includes a rule called Rule 26, where</p> <p>16 there is a duty to disclose and required</p> <p>17 disclosures.</p> <p>18 Do you see that?</p> <p>19 A. Yes.</p> <p>20 Q. And on the next page down in</p> <p>21 26(a)(2)(B)(iv).</p> <p>22 MR. WATTS: Highlight it,</p> <p>23 all of that.</p> <p>24 BY MR. WATTS:</p>	<p style="text-align: right;">Page 56</p> <p>1 you're listed on, right?</p> <p>2 A. Yeah.</p> <p>3 Q. And with respect to Dr. Raz</p> <p>4 Gross, this is a medical doctor with whom</p> <p>5 you hold in the highest regard.</p> <p>6 A. Yes, that's true.</p> <p>7 Q. Dr. Abraham Reichenberg</p> <p>8 works with you at Mount Sinai, right?</p> <p>9 A. Yes.</p> <p>10 Q. A medical doctor and a</p> <p>11 researcher that you hold in the highest</p> <p>12 regard.</p> <p>13 A. Yes.</p> <p>14 Q. Ori Kapra, is that a doctor</p> <p>15 you respect?</p> <p>16 A. I don't know Ori Kapra.</p> <p>17 Q. Okay. So of the four</p> <p>18 authors that are listed, yourself,</p> <p>19 together with Reichenberg and Gross, are</p> <p>20 three individuals that you would</p> <p>21 absolutely say know exactly what they are</p> <p>22 doing from the standpoint of autism</p> <p>23 research, right?</p> <p>24 MS. BROWN: Object to the</p>
<p style="text-align: right;">Page 55</p> <p>1 Q. It is a list of publications</p> <p>2 authored in the previous ten years.</p> <p>3 Do you see that?</p> <p>4 You know that's required,</p> <p>5 right?</p> <p>6 MS. BROWN: I object to this</p> <p>7 line of questioning showing an</p> <p>8 expert witness the Federal Rules</p> <p>9 of Civil Procedure.</p> <p>10 BY MR. WATTS:</p> <p>11 Q. Go ahead, sir.</p> <p>12 A. So, unfortunately, with</p> <p>13 chapters there's no way to</p> <p>14 cross-reference databases. When you talk</p> <p>15 about publications that are published</p> <p>16 online or through peer-review processes,</p> <p>17 you can search for it, so you can have an</p> <p>18 inclusive list.</p> <p>19 With chapters you can't have</p> <p>20 an inclusive list. So I regret that the</p> <p>21 chapter slipped through, but I can't know</p> <p>22 something that I was not made aware of.</p> <p>23 Q. Doctor, if we go to your CV,</p> <p>24 there's all sorts of book chapters that</p>	<p style="text-align: right;">Page 57</p> <p>1 form.</p> <p>2 You can answer.</p> <p>3 THE WITNESS: Right. Which</p> <p>4 is why I would trust Dr. Gross and</p> <p>5 Dr. Reichenberg to put appropriate</p> <p>6 things in this chapter.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. You know --</p> <p>9 MS. BROWN: Were you done?</p> <p>10 THE WITNESS: Yeah.</p> <p>11 MS. BROWN: Okay.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Dr. Reichenberg is an</p> <p>14 outstanding scientist in the field of</p> <p>15 autism spectrum disorder at Mount Sinai,</p> <p>16 agreed?</p> <p>17 A. I respect Dr. Reichenberg,</p> <p>18 yes.</p> <p>19 Q. And we can have a situation</p> <p>20 where outstanding, well-respected medical</p> <p>21 doctors just disagree; is that right?</p> <p>22 A. I think it depends on the</p> <p>23 issue.</p> <p>24 Q. Okay. And we'll go through</p>

<p>Page 58</p> <p>1 that issue in a little bit.</p> <p>2 But after this book, that</p> <p>3 you're listed as a co-author, said what</p> <p>4 it said with respect to acetaminophen,</p> <p>5 you had not yet been hired as a defense</p> <p>6 expert in this case; is that right?</p> <p>7 A. Correct.</p> <p>8 Q. You were hired on what date</p> <p>9 in this case?</p> <p>10 A. I don't know the exact date.</p> <p>11 Q. Okay. If I told you the</p> <p>12 first entry on your billing time records</p> <p>13 that you provided to us is December 15th</p> <p>14 of 2022, would you accept that?</p> <p>15 A. Yes.</p> <p>16 Q. Okay. Who first called you</p> <p>17 in this case?</p> <p>18 A. David Cohen.</p> <p>19 Q. Okay. And David Cohen</p> <p>20 with -- is who?</p> <p>21 A. He's a defense attorney at</p> <p>22 Butler Snow.</p> <p>23 Q. Okay. And he called you</p> <p>24 during the month of November, didn't he?</p>	<p>Page 60</p> <p>1 anymore; is that right?</p> <p>2 A. I believe the correspondence</p> <p>3 that I sent to Mr. Tillery was before I</p> <p>4 spoke to doctor -- Mr. Cohen, but...</p> <p>5 Q. Okay. If you sent an e-mail</p> <p>6 to Mr. Tillery on the 14th and your first</p> <p>7 billing entry in this case is on the 15th</p> <p>8 of December, would that comport with your</p> <p>9 recollection?</p> <p>10 MS. BROWN: Objection to the</p> <p>11 form. Vague.</p> <p>12 THE WITNESS: As I recall, I</p> <p>13 had asked defense attorneys from</p> <p>14 another case that I was working on</p> <p>15 about this acetaminophen case and</p> <p>16 my discussion with the plaintiffs'</p> <p>17 attorneys. And at that point I</p> <p>18 think I had sent an e-mail to</p> <p>19 Mr. Tillery saying that I had to</p> <p>20 essentially bow out of trying to</p> <p>21 be helpful because it represented</p> <p>22 something of a conflict with</p> <p>23 another case. Not -- not related</p> <p>24 to the --</p>
<p>Page 59</p> <p>1 A. I think the first</p> <p>2 conversation was in the month of</p> <p>3 December.</p> <p>4 Q. Okay. And after you talked</p> <p>5 to Mr. Cohen, did you tell him that you</p> <p>6 were already in discussions with a</p> <p>7 gentleman by the name of Steve Tillery, a</p> <p>8 lawyer from Illinois?</p> <p>9 MS. BROWN: Objection to the</p> <p>10 form of the question.</p> <p>11 THE WITNESS: The first</p> <p>12 time --</p> <p>13 MS. BROWN: Assumes facts.</p> <p>14 Go ahead.</p> <p>15 THE WITNESS: The first time</p> <p>16 I spoke to Mr. Cohen, I told him</p> <p>17 that I had a conversation with</p> <p>18 Mr. Tillery, yes.</p> <p>19 BY MR. WATTS:</p> <p>20 Q. Okay. And after Mr. Cohen</p> <p>21 from the Butler Snow law firm, a defense</p> <p>22 lawyer in this case, contacted you, you</p> <p>23 then sent correspondence to Mr. Tillery</p> <p>24 telling him you would not be helping him</p>	<p>Page 61</p> <p>1 BY MR. WATTS:</p> <p>2 Q. And what was the other case</p> <p>3 that presented a conflict?</p> <p>4 A. That was the Hain Celestial</p> <p>5 case.</p> <p>6 Q. I'm sorry?</p> <p>7 A. The Hain Celestial case.</p> <p>8 Q. Okay. And what did it</p> <p>9 involve?</p> <p>10 A. The one that we just</p> <p>11 discussed, the baby food causing heavy</p> <p>12 metal poisoning.</p> <p>13 Q. Okay. And we'll get to that</p> <p>14 case in a little bit, but -- I showed you</p> <p>15 Rule 26 not to be argumentative, but you</p> <p>16 understand that if you're listed as an</p> <p>17 author on a book chapter, you have a duty</p> <p>18 to disclose it?</p> <p>19 MS. BROWN: Object. Lacks</p> <p>20 foundation.</p> <p>21 THE WITNESS: So, as a</p> <p>22 general rule in terms of like</p> <p>23 scientific ethics, which is what I</p> <p>24 abide by, I absolutely disclose</p>

<p>Page 62</p> <p>1 everything that I'm aware of.</p> <p>2 This was an oversight, and I</p> <p>3 regret it.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. Okay. And, again, not</p> <p>6 beating a dead horse here, but your</p> <p>7 explanation is that it was an oversight,</p> <p>8 right?</p> <p>9 MS. BROWN: Objection.</p> <p>10 Asked and answered.</p> <p>11 THE WITNESS: My explanation</p> <p>12 is that this was a chapter that</p> <p>13 was written by somebody else where</p> <p>14 my name was put on it as a</p> <p>15 courtesy. And while I was aware</p> <p>16 that it was being written, I</p> <p>17 didn't have an opportunity to read</p> <p>18 it. I didn't know that it was</p> <p>19 actually being published. I</p> <p>20 didn't know what textbook it went</p> <p>21 into.</p> <p>22 And, yes, it was an</p> <p>23 oversight.</p> <p>24 BY MR. WATTS:</p>	<p>Page 64</p> <p>1 done or not.</p> <p>2 Q. Okay. You know last night I</p> <p>3 got an e-mail supplementing your</p> <p>4 materials considered list as part of the</p> <p>5 Rule 26 disclosure supplementation,</p> <p>6 right?</p> <p>7 MS. BROWN: Objection to the</p> <p>8 form. Lacks foundation.</p> <p>9 THE WITNESS: Yeah, I</p> <p>10 don't -- I don't know whether you</p> <p>11 did or not.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Okay. Was there any</p> <p>14 discussion where you said, oh, that was</p> <p>15 an oversight, I need to add that to my</p> <p>16 curriculum vitae to be fair to Mr. Watts</p> <p>17 and the plaintiffs. They need to know</p> <p>18 that I'm listed as a co-author on a book</p> <p>19 chapter that says something diametrically</p> <p>20 opposed to my position in this case?</p> <p>21 MS. BROWN: I object to the</p> <p>22 form of the question. Assumes</p> <p>23 facts. Lacks foundation.</p> <p>24 BY MR. WATTS:</p>
<p>Page 63</p> <p>1 Q. And so is today the first</p> <p>2 day that you have seen the book chapter,</p> <p>3 Exhibit 494, which you were listed a</p> <p>4 co-author of in the second edition of the</p> <p>5 Textbook of Autism Spectrum Disorders,</p> <p>6 published in March of 2022?</p> <p>7 A. No. Defense attorneys had</p> <p>8 found it and asked me about it, I think,</p> <p>9 about a month ago, three weeks ago.</p> <p>10 Q. Okay. And a month or three</p> <p>11 weeks ago when the defense attorneys</p> <p>12 found it and asked you about it, did you</p> <p>13 supplement your Rule 26 disclosure so</p> <p>14 that a plaintiffs' lawyer wanting to talk</p> <p>15 to you about your publications could know</p> <p>16 that you were listed as a co-author in</p> <p>17 Chapter 11 of the Textbook of Autism</p> <p>18 Spectrum Disorders, Second Edition?</p> <p>19 A. Sorry, you have to repeat</p> <p>20 the question.</p> <p>21 Q. Sure.</p> <p>22 Did you supplement your</p> <p>23 Rule 26 disclosure?</p> <p>24 A. I don't know if that was</p>	<p>Page 65</p> <p>1 Q. Go ahead.</p> <p>2 A. So I think you're</p> <p>3 mischaracterizing the chapter, first of</p> <p>4 all. It doesn't totally oppose my</p> <p>5 opinions. I don't agree with everything</p> <p>6 that was written in the chapter.</p> <p>7 I think, from my</p> <p>8 perspective, when I discovered this</p> <p>9 chapter, I do think it's important to be</p> <p>10 included now on my CV going forward,</p> <p>11 absolutely.</p> <p>12 Q. Okay. Fair enough.</p> <p>13 Now, you say you don't agree</p> <p>14 with everything written in the chapter</p> <p>15 with your name on it.</p> <p>16 Do you agree that there are</p> <p>17 other researchers at outstanding medical</p> <p>18 schools that hold that same position with</p> <p>19 which you now disagree, right?</p> <p>20 A. Can you be more specific.</p> <p>21 Q. Sure. Let's go through a</p> <p>22 list of them.</p> <p>23 Are you familiar with a</p> <p>24 university known as Harvard University?</p>

<p style="text-align: right;">Page 66</p> <p>1 A. I am, yes.</p> <p>2 Q. What about Mount Sinai?</p> <p>3 That's where you work, right?</p> <p>4 A. Yes.</p> <p>5 Q. Johns Hopkins?</p> <p>6 A. Yes.</p> <p>7 Q. Is that an outstanding</p> <p>8 medical research university?</p> <p>9 A. I think it's got an</p> <p>10 excellent reputation. I think you have</p> <p>11 to judge research based on the</p> <p>12 researchers.</p> <p>13 Q. Yale, is that a good school?</p> <p>14 A. I'm sure Yale has some good</p> <p>15 schools within it, yes.</p> <p>16 Q. And not subjugating Mount</p> <p>17 Sinai in anyway, but Johns Hopkins,</p> <p>18 Harvard, and Yale are all in the top ten</p> <p>19 medical schools in the United States,</p> <p>20 right?</p> <p>21 A. I think it depends on how</p> <p>22 you define those rankings.</p> <p>23 Q. Sure.</p> <p>24 A. But I'm sure there's</p>	<p style="text-align: right;">Page 68</p> <p>1 League jokes later, but I mean, the</p> <p>2 bottom line is, is that you understand</p> <p>3 that there are researchers at your</p> <p>4 medical school, at Harvard, at Yale, and</p> <p>5 Johns Hopkins, who disagree with your</p> <p>6 position in this case?</p> <p>7 MS. BROWN: Objection to the</p> <p>8 form. Assumes facts.</p> <p>9 THE WITNESS: So I think</p> <p>10 that the consensus among the</p> <p>11 scientific community, at least as</p> <p>12 it relates to acetaminophen, is</p> <p>13 that it's not considered to be a</p> <p>14 risk factor and that any of the</p> <p>15 speculation that occurred in this</p> <p>16 chapter was just that,</p> <p>17 speculation.</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Have you read the consensus</p> <p>20 statement signed by 91 scientists with</p> <p>21 respect to their concerns about the</p> <p>22 prenatal use of acetaminophen?</p> <p>23 A. I've read the consensus</p> <p>24 statement. I've read various review</p>
<p style="text-align: right;">Page 67</p> <p>1 rankings that include them, sure.</p> <p>2 Q. Pretty much every ranking of</p> <p>3 medical school and research facilities</p> <p>4 that exist have Johns Hopkins, Harvard,</p> <p>5 and Yale in the top ten; would you give</p> <p>6 me that?</p> <p>7 A. I think that they are</p> <p>8 outstanding schools with good</p> <p>9 reputations, sure.</p> <p>10 Q. Sure. And, you know, I went</p> <p>11 to a law school, University of Texas,</p> <p>12 that's in the teens, and it bothers them</p> <p>13 greatly they are not in the top</p> <p>14 10 percent.</p> <p>15 Mount Sinai is listed about</p> <p>16 16 to 18, consistently, right?</p> <p>17 A. Yeah. I went to the</p> <p>18 University of Wisconsin, which is in the</p> <p>19 30s.</p> <p>20 Q. And, you know --</p> <p>21 MS. BROWN: You guys are</p> <p>22 both doing great, for the record.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. You and I can tell Ivy</p>	<p style="text-align: right;">Page 69</p> <p>1 papers.</p> <p>2 Q. Who is the lead author --</p> <p>3 MS. BROWN: Let him finish.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. I'm sorry. I apologize.</p> <p>6 Who is the lead author of</p> <p>7 the consensus statement?</p> <p>8 A. I believe it's a person</p> <p>9 named Bauer.</p> <p>10 Q. Okay. Do you know</p> <p>11 Dr. Bauer?</p> <p>12 A. I do not.</p> <p>13 Q. Who is the second author</p> <p>14 listed on the consensus statement?</p> <p>15 A. I do not know.</p> <p>16 Q. Do you know a Dr. Swan?</p> <p>17 A. I do.</p> <p>18 Q. And where does Dr. Swan</p> <p>19 work?</p> <p>20 A. She worked at Mount Sinai.</p> <p>21 She is a collaborator of mine.</p> <p>22 Q. Is she an outstanding autism</p> <p>23 research disorder researcher?</p> <p>24 A. I don't think that she would</p>

<p style="text-align: right;">Page 70</p> <p>1 consider herself an autism research 2 disorder researcher. 3 Q. Is she a medical doctor? 4 A. I don't think that she is a 5 medical doctor. I think that she is a 6 Ph.D. 7 Q. Ph.D. Okay. 8 So we're still talking -- 9 A. I could be wrong though. 10 Q. Okay. Even if she's only a 11 Ph.D., that's a hell of an 12 accomplishment. We still call her 13 doctor, right? 14 A. Absolutely. 15 Q. Okay. Do you find her to be 16 an outstanding researcher? 17 A. I think that she's a 18 thoughtful scientist. 19 Q. She's not a hack? 20 MS. BROWN: Objection to the 21 form. 22 THE WITNESS: I wouldn't 23 consider Dr. Swan a hack. 24 BY MR. WATTS:</p>	<p style="text-align: right;">Page 72</p> <p>1 autism. 2 Q. Dr. Wright. What is 3 Dr. Wright's first name, at Mount Sinai? 4 A. Dr. Wright? 5 Q. Yeah. 6 A. How do you spell the last 7 name? 8 Q. W-R-I-G-H-T. 9 A. I'm not familiar with 10 Dr. Wright. 11 Q. Okay. I'll show you some 12 Mount Sinai publications. Maybe it will 13 prompt your recollection. 14 A. Okay. 15 Q. But let's go back to medical 16 schools for a second. 17 MR. WATTS: Exhibit 557, 18 please. 19 (Document marked for 20 identification as Exhibit 21 Kolevzon 557.) 22 BY MR. WATTS: 23 Q. And this is -- just blow up 24 the title for me. It's on Mount Sinai's</p>
<p style="text-align: right;">Page 71</p> <p>1 Q. She's not a quack? 2 MS. BROWN: Objection to the 3 form. 4 THE WITNESS: I wouldn't 5 consider her a quack, either. 6 BY MR. WATTS: 7 Q. I notice that in your report 8 you reference that clown over in England 9 that committed, you know, medical fraud 10 with respect to the vaccines. We're not 11 dealing with people like that when we are 12 talking about Drs. Bauer and Dr. Swan and 13 folks at Harvard and Yale and Johns 14 Hopkins, right? 15 A. Yeah, I don't think I would 16 refer to any -- 17 Q. Okay. 18 A. -- anybody as a clown. But 19 Dr. Swan is a respected scientist. 20 Q. Okay. Dr. Reichenberg, 21 outstanding, respected scientist, right? 22 A. I think that both of these 23 people have a real commitment to trying 24 to understand environmental causes of</p>	<p style="text-align: right;">Page 73</p> <p>1 website. 2 MR. WATTS: Can you blow up 3 the title first. I'm sorry. 4 MS. BROWN: Oh, wow. 5 BY MR. WATTS: 6 Q. And up at the top you see 7 Mount Sinai? 8 A. Yep. 9 Q. Okay. And it's a Mount 10 Sinai press release from January 10, 11 2018, entitled "Acetaminophen Use During 12 Pregnancy Associated With Elevated Rate 13 of Language Delay in Girls, Mount Sinai 14 Researchers Find." 15 Is that right? 16 A. That's what it says, yes. 17 Q. And in this Mount Sinai 18 press release -- by the way, you were 19 working at Mount Sinai at the time, 20 right? 21 A. Yes. 22 Q. It quotes Dr. Swan. And if 23 you can pull up -- 24 MS. BROWN: And, Counsel, I</p>

<p style="text-align: right;">Page 74</p> <p>1 don't know what to do to give him 2 the opportunity to look at this 3 whole thing, because the printed 4 copy is super tiny. 5 MR. WATTS: Yeah. So I 6 think that I'm going to have to 7 plead guilty to -- I tried to buy 8 a high-definition laser printer, 9 and they sold me a Canon Inkjet 10 that's just a mess. 11 But he has the ability to 12 blow this up, so we'll do that on 13 the screen. Not all of them are 14 printed like this, but there are a 15 few, and I apologize for that. 16 MS. BROWN: Okay. No 17 worries. 18 Just to the extent that you 19 need to -- you're not familiar 20 with everything this document 21 says, and you need to read it 22 before you truthfully answer 23 counsel's questions. He's going 24 to let you do that.</p>	<p style="text-align: right;">Page 76</p> <p>1 development, our findings, if replicated, 2 suggest that pregnant women should limit 3 their use of this analgesic during 4 pregnancy." 5 That's what Dr. Swan said 6 back in 2018; is that right? 7 MS. BROWN: I object to this 8 line of questioning as lacking 9 foundation. 10 Do you need to see the 11 entire document to answer these 12 questions? 13 THE WITNESS: So I've read 14 this document. I'm familiar with 15 Dr. Swan's opinions -- 16 BY MR. WATTS: 17 Q. And that's what she said. 18 A. I just disagree with her. 19 Q. I know, but that's what she 20 said, right? 21 A. So you've read what she said 22 from this press release correctly. 23 Q. Okay. Great. 24 Now let's go on past Mount</p>
<p style="text-align: right;">Page 75</p> <p>1 BY MR. WATTS: 2 Q. And the only thing I want to 3 ask you about is the senior author of 4 that study is Shanna Swan, Ph.D., a 5 professor of Environmental and Public 6 Health at the Icahn School of Medicine; 7 is that right? 8 A. Yes. That's Shanna Swan. 9 Q. This is a person you 10 respect, right? 11 A. So I can respect her science 12 and not agree with her opinions. 13 Q. I didn't ask you whether you 14 agreed with her. I said you respect her 15 science, right? 16 A. I think that she is a good 17 scientist. 18 Q. Okay. 19 MR. WATTS: Now go back to 20 the quote. 21 BY MR. WATTS: 22 Q. She says, "Given the 23 prevalence of prenatal acetaminophen use 24 and the importance of language</p>	<p style="text-align: right;">Page 77</p> <p>1 Sinai to Johns Hopkins, Exhibit 558. 2 (Document marked for 3 identification as Exhibit 4 Kolevzon 558.) 5 BY MR. WATTS: 6 Q. And the title is "Taking 7 Tylenol During Pregnancy Associated With 8 Elevated Risk For Autism, ADHD." 9 "A Johns Hopkins study 10 analyzing umbilical cord blood samples 11 found that newborns with the highest 12 exposure to acetaminophen were about 13 three times more likely to be diagnosed 14 with ADHD and autism spectrum disorder in 15 childhood." 16 Is that the title of this 17 document that was published in 18 November 5, 2019? 19 A. So you've correctly read the 20 title. If we are going to talk about 21 this particular opinion, I'll need to 22 look at the actual paper that it's 23 referencing. 24 Q. Okay. Well, let -- I'm just</p>

<p style="text-align: right;">Page 78</p> <p>1 asking about the authors for now.</p> <p>2 MR. WATTS: Go -- go to the</p> <p>3 quote from...</p> <p>4 BY MR. WATTS:</p> <p>5 Q. Do you know Xiaobin Wang?</p> <p>6 A. I do not.</p> <p>7 Q. Okay. Where is the</p> <p>8 Bloomberg School Department of</p> <p>9 Population, Family and Reproductive</p> <p>10 Health? Is that part of Johns Hopkins?</p> <p>11 A. I understand it to be, yes.</p> <p>12 Q. He says, "Our study further</p> <p>13 supports the concerns raised by previous</p> <p>14 studies- that there is a link between</p> <p>15 Tylenol use during pregnancy and</p> <p>16 increased risk of autism and ADHD."</p> <p>17 Is that what Dr. Wang said?</p> <p>18 MS. BROWN: Objection to the</p> <p>19 form. This lacks foundation.</p> <p>20 THE WITNESS: You're reading</p> <p>21 quotes from press releases.</p> <p>22 BY MR. WATTS:</p> <p>23 Q. And my only question is,</p> <p>24 with respect to your knowledge, you had</p>	<p style="text-align: right;">Page 80</p> <p>1 THE WITNESS: This seems to</p> <p>2 be a quote from a press release,</p> <p>3 yes.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. Okay.</p> <p>6 MR. WATTS: And if we could</p> <p>7 go down to the paragraphs that we</p> <p>8 highlighted. Just blow those up.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. It says, "A team of</p> <p>11 13 scientists- including one from the</p> <p>12 Yale School of Public Health- are</p> <p>13 cautioning against the use of pain</p> <p>14 relievers with acetaminophen (also known</p> <p>15 as paracetamol) by pregnant women, citing</p> <p>16 a growing body of research that suggests</p> <p>17 the drug might alter fetal development."</p> <p>18 MR. WATTS: Let me see the</p> <p>19 next quote.</p> <p>20 BY MR. WATTS:</p> <p>21 Q. I want to ask you about this</p> <p>22 person. Do you know who Zeyan Liew is?</p> <p>23 A. I've read some of Dr. Liew's</p> <p>24 papers, yes.</p>
<p style="text-align: right;">Page 79</p> <p>1 no information that Dr. Wang is not a</p> <p>2 highly respected researcher at one of the</p> <p>3 best medical schools in this country?</p> <p>4 A. I can't say anything about</p> <p>5 Dr. Wang. I don't know who he is.</p> <p>6 Q. Okay. Let's go to Yale.</p> <p>7 Exhibit 559.</p> <p>8 (Document marked for</p> <p>9 identification as Exhibit</p> <p>10 Kolevzon 559.)</p> <p>11 BY MR. WATTS:</p> <p>12 Q. The title at the top says,</p> <p>13 "Scientific Team, Including YSPH" --</p> <p>14 that's the Yale School of Public Health,</p> <p>15 right?</p> <p>16 A. Mm-hmm.</p> <p>17 Q. "Scientific Team, Including</p> <p>18 the Yale School of Public Health</p> <p>19 Researcher, Warn Against Use of</p> <p>20 Acetaminophen by Pregnant Women."</p> <p>21 And that's published on</p> <p>22 September 30th of 2021; is that right?</p> <p>23 MS. BROWN: Objection.</p> <p>24 Lacks foundation.</p>	<p style="text-align: right;">Page 81</p> <p>1 Q. Dr. Liew write -- or says,</p> <p>2 "Our lab was among the first to report a</p> <p>3 potential harmful effect of acetaminophen</p> <p>4 on fetal brain development in a large</p> <p>5 longitudinal human cohort study. It is</p> <p>6 time to take the growing body of evidence</p> <p>7 seriously and consider precautionary</p> <p>8 measures, says Zeyan Liew, Ph.D., M.P.H.,</p> <p>9 an assistant professor in the Yale School</p> <p>10 of Public Health Department of</p> <p>11 Environmental Health Sciences and one of</p> <p>12 the authors of the statement"; is that</p> <p>13 right?</p> <p>14 A. So that's what the quote</p> <p>15 says; however, if you look at Dr. Liew's</p> <p>16 paper, I wouldn't necessarily agree with</p> <p>17 those conclusions.</p> <p>18 Q. Okay. But let me ask you,</p> <p>19 Dr. Liew is a respected researcher at the</p> <p>20 Yale School of Public Health, one of the</p> <p>21 best medical schools this country has to</p> <p>22 offer, right?</p> <p>23 A. I don't know Dr. Liew. I</p> <p>24 can't comment on his respectability.</p>

<p style="text-align: right;">Page 82</p> <p>1 Q. And so you have no negative 2 view of his respectability, acquiring 3 that position at one of the nation's 4 finest medical schools? 5 A. I have no positive or 6 negative view. 7 Q. Okay. 8 A. I do have a view on the 9 results of his paper, however. 10 MR. WATTS: Let's go to the 11 next paragraph. 12 BY MR. WATTS: 13 Q. It says, "The Yale School of 14 Public Health has previously contributed 15 to published research that raises 16 questions about the drug's safety. This 17 research includes a series of 18 epidemiological studies that linked 19 pregnancy intake of acetaminophen with an 20 increased risk for attention deficit 21 hyperactivity disorders, or ADHD, as well 22 as impaired cognitive and executive 23 function when analyzing detailed 24 pregnancy medication intake. Data in a</p>	<p style="text-align: right;">Page 84</p> <p>1 with certainty. 2 BY MR. WATTS: 3 Q. Okay. You are aware that 4 through technology, whether it be AI or 5 databases, we can load in everything 6 you've ever done and do Boolean searches 7 to look for words, right? 8 A. Yeah. 9 MS. BROWN: Objection. 10 Lacks foundation. 11 BY MR. WATTS: 12 Q. Can you tell us whether the 13 word "acetaminophen" shows up in any 14 publication you ever did before this 15 lawyer from Butler Snow called you and 16 asked you to be an expert in this case? 17 MS. BROWN: I object on 18 multiple grounds, including that 19 it lacks foundation and it's 20 argumentative. 21 BY MR. WATTS: 22 Q. Go ahead. 23 A. So I think I answered the 24 question, which is that I cannot be</p>
<p style="text-align: right;">Page 83</p> <p>1 Dutch" -- "in a Danish longitudinal 2 cohort included more than 60,000 mothers 3 and children." 4 Were you involved in the 5 research that was done by those 6 13 researchers, including this gentleman 7 from the Yale School of Public Health? 8 A. So my research focused -- 9 and my role, I think, in this case, is as 10 an autism researcher and an autism 11 expert. And this is not about autism. 12 Q. So let's add -- let's take 13 out the book chapter that wasn't listed 14 in your CV. 15 If you could assume, and you 16 should, that I've read everything you've 17 ever written, does the word 18 "acetaminophen" show up a single time in 19 any of the research or any of the 20 publications that you did prior to being 21 hired in this case? 22 MS. BROWN: Objection to the 23 speech. 24 THE WITNESS: I can't say</p>	<p style="text-align: right;">Page 85</p> <p>1 certain. If you want me to speculate... 2 Q. Let's go with your 3 recollection -- 4 MS. BROWN: Let's let him 5 finish, though. 6 BY MR. WATTS: 7 Q. Oh, I thought you were done. 8 I apologize. 9 A. And so I think it's 10 unlikely. 11 Q. Okay. 12 A. I have not considered 13 acetaminophen to be a significant risk 14 factor in autism, and I hadn't looked 15 deeply into literature. When I had an 16 opportunity to actually investigate the 17 literature, it became pretty clear to me 18 that it should not be considered a 19 significant risk factor. 20 MR. WATTS: Okay. 21 Objection. Nonresponsive. 22 BY MR. WATTS: 23 Q. Here is my question. 24 Can you, by way of</p>

<p style="text-align: right;">Page 86</p> <p>1 recollection, point me to any publication 2 that you had ever published before being 3 hired as an expert in this case that even 4 referenced acetaminophen? 5 MS. BROWN: Objection. 6 Asked and answered. 7 You can answer again. 8 THE WITNESS: By way of 9 recollection, right this minute, 10 no, I cannot. 11 BY MR. WATTS: 12 Q. Okay. Fair enough. 13 MR. WATTS: Let's go to 14 Harvard, Exhibit 560. 15 (Document marked for 16 identification as Exhibit 17 Kolevzon 560.) 18 BY MR. WATTS: 19 Q. "Is a common pain reliever 20 safe during pregnancy?" 21 Do you see that, sir? 22 A. I see what's written, yes. 23 MR. WATTS: And if we can go 24 to the fourth page.</p>	<p style="text-align: right;">Page 88</p> <p>1 testimony that she's anything other than 2 an outstanding researcher -- 3 MS. BROWN: Objection to the 4 form. 5 MR. WATTS: Excuse me, I'm 6 not done with my question. Let 7 me -- let me ask the question and 8 finish it and then you can object. 9 BY MR. WATTS: 10 Q. You don't have any 11 information that Dr. Rexrode is anything 12 but an outstanding researcher at one of 13 the finest medical schools in this 14 country, the Harvard-affiliated Brigham 15 and Women's Hospital, right? 16 MS. BROWN: Objection to the 17 form. Lacks foundation. 18 THE WITNESS: Yeah. I mean, 19 I don't know why you're asking me 20 about Dr. Rexrode. How is that 21 relevant to this particular -- 22 BY MR. WATTS: 23 Q. Well, it's relevant because 24 I ask the questions and you have to</p>
<p style="text-align: right;">Page 87</p> <p>1 BY MR. WATTS: 2 Q. It says, "Sensible steps if 3 you're pregnant." 4 MS. BROWN: And, Counsel, 5 can he have a moment to take a 6 look at this? This one is printed 7 in a readable format. 8 BY MR. WATTS: 9 Q. So the questions I'm going 10 to ask you are on Page 4, about sensible 11 steps. 12 MS. BROWN: But if he's 13 never seen it before, let's give 14 him a minute to review it so he 15 can answer your questions. 16 MR. WATTS: I'm just 17 pointing him to where we're going. 18 By MR. WATTS: 19 Q. All right. Do you know 20 Dr. Kathryn Rexrode at Harvard? 21 A. No. 22 Q. I'm sorry? 23 A. No. 24 Q. Okay. So you don't have any</p>	<p style="text-align: right;">Page 89</p> <p>1 answer them, and the judge can decide 2 whether it's relevant. 3 A. Okay. 4 Q. And my question is, you know 5 that Harvard is affiliated with Brigham 6 and Women's Hospital, right? 7 A. Yes. 8 Q. It's one of the outstanding 9 medical schools in this country? 10 A. It's got an excellent 11 reputation. 12 Q. Okay. And in terms of this 13 publication, the Harvard Health 14 Publishing, it says, "Sensible steps if 15 you are pregnant." 16 And the first step is, 17 "Avoid acetaminophen during pregnancy 18 when possible"; is that right? 19 MS. BROWN: Objection to the 20 form. Lacks foundation. 21 THE WITNESS: Again, that's 22 what's written here, but -- 23 BY MR. WATTS: 24 Q. This says that --</p>

<p style="text-align: right;">Page 90</p> <p>1 MS. BROWN: Let him finish, 2 please, Counsel. 3 BY MR. WATTS: 4 Q. Is that what's written here? 5 A. So that this is a press 6 release of sorts from a non-peer-reviewed 7 website, I imagine. And right before it 8 talks about sensible steps, it talks 9 about "more research is needed." 10 So I agree with you that 11 there are these things that are written. 12 The question is what's the basis for 13 them. 14 MR. WATTS: Okay. 15 Objection. Nonresponsive. 16 MR. WATTS: 17 Q. Under, "Sensible steps if 18 you're pregnant," does it say, "Avoid 19 acetaminophen during pregnancy when 20 possible"? 21 A. So it's not clear on what 22 basis this person is making this 23 suggestion. 24 Q. I didn't ask you that.</p>	<p style="text-align: right;">Page 92</p> <p>1 Q. And -- 2 MS. BROWN: Wait. Please 3 let him finish. 4 THE WITNESS: -- and I don't 5 know what basis she's making this 6 opinion. 7 BY MR. WATTS: 8 Q. And at the bottom it says, 9 "Minimize use. If you do need to take 10 acetaminophen during pregnancy, take it 11 for the shortest amount of time possible 12 at the lowest effective dose to reduce 13 fetal exposure. 'This advice about the 14 lowest necessary dose for the shortest 15 period of time is generally good 16 counseling for all over-the-counter 17 medication use, especially during 18 pregnancy,' says Dr. Rexrode." 19 Is that the words on the 20 paper? 21 A. Those are the words on the 22 paper. 23 Q. Okay. Now let's go to 24 Exhibit 561.</p>
<p style="text-align: right;">Page 91</p> <p>1 MS. BROWN: Wait. Let him 2 finish, please, Counsel. 3 THE WITNESS: Those are -- 4 those are the words on the page. 5 BY MR. WATTS: 6 Q. Okay. It also says, "Its 7 use should be limited to situations where 8 it's really needed," says Dr. Rexrode," 9 right? 10 Are those words on the page? 11 A. It says, "Dr. Rexrode has 12 warned patients against using NSAID 13 drugs, such as Advil and Aleve, and 14 suggested taking acetaminophen instead." 15 Q. And, keep going. 16 A. "Now I'll also tell you 17 [sic] that some people -- have -- some 18 concerns have been raised about 19 acetaminophen use during pregnancy." 20 Q. "And explain that its use 21 should be limited to situations where 22 it's really needed," right? 23 A. This is what Dr. Rexrode, 24 who I don't know who she is --</p>	<p style="text-align: right;">Page 93</p> <p>1 (Document marked for 2 identification as Exhibit 3 Kolevzon 561.) 4 BY MR. WATTS: 5 Q. And this is the so-called 6 consensus statement; is that right? 7 MS. BROWN: Hang on. I'm 8 going to give him the hardcopy so 9 he can have a minute to -- 10 MR. WATTS: Sure. 11 MS. BROWN: -- refamiliarize 12 himself before you ask the 13 questions. 14 MR. WATTS: 561. 15 MS. BROWN: We got it. 16 BY MR. WATTS: 17 Q. Is this the one where 18 Dr. Bauer is the first author and Shanna 19 Swan is second? 20 A. Yes. 21 Q. And in the abstract does it 22 say, "We recommend that pregnant women 23 should be cautioned at the beginning of 24 pregnancy to," and it says, "forego APAP</p>

<p style="text-align: right;">Page 94</p> <p>1 unless it is medically indicated; consult 2 with a physician or pharmacist if they 3 are uncertain whether its use is 4 indicated and before using on a long-term 5 basis; and minimize exposure by using the 6 lowest effective dose for the shortest 7 possible time." 8 Is that what it says? 9 A. I think this group of 10 authors is providing their opinion on the 11 use of acetaminophen and urging caution. 12 Q. And is that what it says? 13 A. It's what it says. 14 Q. Okay. 15 A. But I don't think that's 16 commonly accepted in the scientific 17 community. 18 Q. Now, let's talk about that 19 for a second. 20 MR. WATTS: Go to 21 Exhibit 562. 22 (Document marked for 23 identification as Exhibit 24 Kolevzon 562.)</p>	<p style="text-align: right;">Page 96</p> <p>1 reputations? 2 MS. BROWN: Objection. 3 THE WITNESS: No. 4 BY MR. WATTS: 5 Q. Okay. Let's go to Page 2, 6 the supplementary box, the signatories. 7 Do you see, beginning on 8 Number 1 -- we can flip through the 9 pages, and it will go from 1 to 91 -- as 10 we go to Page 2, Page 3, Page 4. Stop at 11 Page 5. 12 And it keeps going to 91, 13 but let me ask you about Number 41. 14 Do you know who Martha 15 Herbert is? 16 A. 41. 17 MS. BROWN: Just a minute 18 while he gets there. 19 THE WITNESS: Martha 20 Herbert? 21 BY MR. WATTS: 22 Q. Herbert? I'm sorry. 23 A. I do not. 24 Q. Is Massachusetts General</p>
<p style="text-align: right;">Page 95</p> <p>1 BY MR. WATTS: 2 Q. And this is a supplementary 3 information to the consensus statement. 4 It's entitled "Paracetamol Use During 5 Pregnancy: A Call for Precautionary 6 Action." 7 Do you see that? 8 MS. BROWN: Hang on a 9 second. I don't -- I just want to 10 get us the hardcopy, and I don't 11 see it. 12 Here we go. 13 BY MR. WATTS: 14 Q. Have you gone through and 15 studied these 91 doctors that signed off 16 on the consensus statement? 17 MS. BROWN: Objection. 18 Vague. 19 THE WITNESS: Can you 20 clarify the question. 21 BY MR. WATTS: 22 Q. Sure. 23 Did -- did you go through 24 and check who they are, see their</p>	<p style="text-align: right;">Page 97</p> <p>1 Hospital an outstanding medical facility 2 in this country? 3 A. MGH has a good reputation, 4 yes. 5 Q. Stephen Schultz, do you know 6 Stephen Schultz, Number 42? 7 A. I don't believe I know 8 Stephen Schultz, no. 9 Q. Now, I don't want to get 10 crossways with you, but this is a 11 gentleman at the University of Texas 12 Health Science Center in San Antonio, 13 Texas, and we are pretty proud of him. 14 Do you know him? 15 A. This is Dr. Schultz again? 16 Q. Yeah. 17 A. No, I still don't know him. 18 Q. Dang. 19 A. Sorry. 20 Q. Okay. How about Number 48. 21 Do you know Dr. Ritz at UCLA? 22 A. No. 23 Q. Is UCLA considered one of 24 the top medical facilities in this</p>

<p style="text-align: right;">Page 98</p> <p>1 country?</p> <p>2 A. UCLA has some excellent</p> <p>3 programs, yes.</p> <p>4 Q. Okay. Let's go to 57.</p> <p>5 A. Yeah.</p> <p>6 Q. Do you know Dr. Bergink?</p> <p>7 A. I do.</p> <p>8 Q. She's one of your colleagues</p> <p>9 at Mount Sinai, right?</p> <p>10 A. She is.</p> <p>11 Q. Dr. -- Number 80, Shanna</p> <p>12 Swan?</p> <p>13 A. I know Dr. Swan, yes.</p> <p>14 Q. One of your colleagues at</p> <p>15 Mount Sinai, right?</p> <p>16 A. She works at Mount Sinai,</p> <p>17 yes.</p> <p>18 Q. And then if we go to 82,</p> <p>19 we've got Dr. Liew at Yale and Dr. Hugh</p> <p>20 Taylor. Do you know Dr. Taylor at Yale?</p> <p>21 A. I don't know either one of</p> <p>22 these personally.</p> <p>23 Q. Okay. What about Number 91,</p> <p>24 Dr. David Møbjerg Kristensen?</p>	<p style="text-align: right;">Page 100</p> <p>1 A. Yep. There are studies</p> <p>2 listed here. That's correct.</p> <p>3 Q. Now, if we go to Page 32,</p> <p>4 there's a "Supplementary Table 4:</p> <p>5 Neurotoxicity Experimental Studies"; is</p> <p>6 that right?</p> <p>7 MS. BROWN: Hang on just a</p> <p>8 sec while he gets there.</p> <p>9 THE WITNESS: These look to</p> <p>10 be model studies, animals, yeah.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. If we go to Page 37,</p> <p>13 Supplementary Table 5 lists review</p> <p>14 articles, right?</p> <p>15 A. Sorry, which page?</p> <p>16 Q. Page 37.</p> <p>17 A. There are some review</p> <p>18 articles in this table, yes.</p> <p>19 Q. And if you go to Page 50,</p> <p>20 they begin the inclusion of references.</p> <p>21 In between 50 and 61, there are</p> <p>22 121 different references that they cite</p> <p>23 to; is that right?</p> <p>24 A. There appear to be</p>
<p style="text-align: right;">Page 99</p> <p>1 A. I don't know Dr. Kristensen</p> <p>2 personally, no.</p> <p>3 Q. Has he taught at Icahn on an</p> <p>4 adjunct professor basis, do you know?</p> <p>5 MS. BROWN: Objection to the</p> <p>6 form. Lacks foundation.</p> <p>7 THE WITNESS: He may or may</p> <p>8 not have. I am not aware.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. Okay. And if we go to</p> <p>11 Page 12, "Supplementary Table 1:</p> <p>12 Reproductive [sic] Epidemiology."</p> <p>13 They list the epidemiology,</p> <p>14 right?</p> <p>15 A. Page 11, yeah.</p> <p>16 Q. Supplementary Table 2 on</p> <p>17 Page 14. They list "Reproduction</p> <p>18 Experimental Studies," right?</p> <p>19 A. That's what Table 2 says,</p> <p>20 yes.</p> <p>21 Q. Page 20, Supplemental</p> <p>22 Table 3, they list "Neurodevelopmental</p> <p>23 Epidemiological" -- or "Epidemiology</p> <p>24 Cohort Studies," right?</p>	<p style="text-align: right;">Page 101</p> <p>1 121 references.</p> <p>2 Q. Now, let me go back to Yale</p> <p>3 for a second, Exhibit 563.</p> <p>4 (Document marked for</p> <p>5 identification as Exhibit</p> <p>6 Kolevzon 563.)</p> <p>7 BY MR. WATTS:</p> <p>8 Q. This is dated the spring of</p> <p>9 2022. Came out about the same time as</p> <p>10 your book chapter.</p> <p>11 "Yale School of Public</p> <p>12 Health Research Identifies Pregnancy</p> <p>13 Risks Associated With Acetaminophen Use."</p> <p>14 MS. BROWN: Sorry, what --</p> <p>15 what exhibit is this?</p> <p>16 MR. WATTS: 563.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Did you see this when it</p> <p>19 came out?</p> <p>20 MS. BROWN: Hang on a second</p> <p>21 while we find it.</p> <p>22 Did we mark this already?</p> <p>23 MR. WATTS: Nope.</p> <p>24 MS. BROWN: Okay.</p>

<p style="text-align: right;">Page 102</p> <p>1 BY MR. WATTS:</p> <p>2 Q. Do you recall seeing this</p> <p>3 when it came out?</p> <p>4 A. I just need to look at the</p> <p>5 article.</p> <p>6 MS. BROWN: Just -- just a</p> <p>7 second. I'll give it to him.</p> <p>8 It's a little bit hard to read.</p> <p>9 Mr. Watts can probably put</p> <p>10 it up on the Elmo if you need it</p> <p>11 expanded --</p> <p>12 THE WITNESS: I just want</p> <p>13 to -- want to see what article</p> <p>14 they are referencing.</p> <p>15 BY MR. WATTS:</p> <p>16 Q. What I want to ask you about</p> <p>17 is the third paragraph from the bottom.</p> <p>18 It says, "In another study."</p> <p>19 MS. BROWN: But, Counsel,</p> <p>20 just because he's never seen this</p> <p>21 before --</p> <p>22 MR. WATTS: I know. I know.</p> <p>23 MS. BROWN: -- if we can</p> <p>24 just give him a minute to</p>	<p style="text-align: right;">Page 104</p> <p>1 acetaminophen for six days, Furnary found</p> <p>2 that acetaminophen to elicit the same</p> <p>3 gene expression patterns and metabolic</p> <p>4 behaviors in the cultures as those known</p> <p>5 to be associated with autism spectrum</p> <p>6 disorder."</p> <p>7 Do you see that, sir?</p> <p>8 A. Yeah, I see that.</p> <p>9 Q. Here's my question:</p> <p>10 Can you tell the ladies and</p> <p>11 gentlemen of the jury what the phrase</p> <p>12 "gene expression" means to you?</p> <p>13 A. So gene expression is,</p> <p>14 essentially, whether the proteins that</p> <p>15 are translated from the DNA are</p> <p>16 upregulated or downregulated.</p> <p>17 Q. Okay. And when this says</p> <p>18 that "the same gene expression patterns</p> <p>19 and metabolic behaviors in the cultures</p> <p>20 of acetaminophen were those known to be</p> <p>21 associated with autism spectrum</p> <p>22 disorder," have you seen this work?</p> <p>23 MS. BROWN: Objection to</p> <p>24 form. Vague.</p>
<p style="text-align: right;">Page 103</p> <p>1 familiarize --</p> <p>2 BY MR. WATTS:</p> <p>3 Q. I know. I'm just pointing</p> <p>4 you to where I want to ask you about.</p> <p>5 MS. BROWN: Thanks.</p> <p>6 MR. WATTS: Just blow up "In</p> <p>7 another study," if you would.</p> <p>8 MS. BROWN: Well, give him a</p> <p>9 second to read this.</p> <p>10 THE WITNESS: Okay.</p> <p>11 MR. WATTS: Now blow up that</p> <p>12 article. "In another study."</p> <p>13 There you go.</p> <p>14 BY MR. WATTS:</p> <p>15 Q. All right. Here is my</p> <p>16 question.</p> <p>17 It references another study</p> <p>18 where a Yale student "used human</p> <p>19 pluripotent stem cells, RNA sequencing,</p> <p>20 and metabolomics to identify cellular</p> <p>21 mechanisms that may be involved in the</p> <p>22 development of autism spectrum disorder.</p> <p>23 After exposing the stem cells in culture</p> <p>24 to clinically relevant doses of</p>	<p style="text-align: right;">Page 105</p> <p>1 You can answer if you</p> <p>2 understand.</p> <p>3 THE WITNESS: That's the --</p> <p>4 that's the end of the question?</p> <p>5 BY MR. WATTS:</p> <p>6 Q. Yeah.</p> <p>7 A. Oh.</p> <p>8 So I'm not sure I feel</p> <p>9 comfortable commenting on the study</p> <p>10 without looking at the actual study. So</p> <p>11 this is just an excerpt.</p> <p>12 Q. Does this ring a bell to you</p> <p>13 at all as something that you recall</p> <p>14 looking at?</p> <p>15 A. I'm not sure I understand</p> <p>16 the question.</p> <p>17 Q. Sure.</p> <p>18 This -- this gene expression</p> <p>19 work that was done at Yale, does it ring</p> <p>20 a bell?</p> <p>21 A. As it relates to what</p> <p>22 specifically?</p> <p>23 Q. Acetaminophen and autism</p> <p>24 spectrum disorder.</p>

Page 106

1 MS. BROWN: Objection to the
2 form.
3 THE WITNESS: So I'm aware
4 of studies that have looked at
5 proxies for gene expression.
6 BY MR. WATTS:
7 Q. Okay. Now, have you done
8 any studies that used proxies of gene
9 expression to compare what the gene
10 expression patterns were for
11 acetaminophen versus what you see in
12 autism spectrum disorder?
13 A. I myself do not do gene
14 expression studies.
15 Q. Fair enough. All right.
16 MR. WATTS: Let's go to
17 Exhibit 403.
18 (Document marked for
19 identification as Exhibit
20 Kolevzon 403.)
21 BY MR. WATTS:
22 Q. And this is your report.
23 You're probably going to need it most of
24 the rest of the day, so just kind of --

Page 107

1 don't put this one up.
2 A. Okay.
3 Q. Is Exhibit 403 a true and
4 correct copy of the expert report that
5 you provided in this case?
6 MS. BROWN: And just at
7 least take a moment to flip
8 through it, please.
9 THE WITNESS: Yeah, it looks
10 to be.
11 BY MR. WATTS:
12 Q. Now, you've also gave a
13 report in a case called Daniels-Feasel;
14 is that right?
15 A. Yes.
16 Q. And that's Exhibit 479. If
17 you could pull that one out as well.
18 (Document marked for
19 identification as Exhibit
20 Kolevzon 479.)
21 BY MR. WATTS:
22 Q. Is the date of this report
23 November 8th of 2018?
24 A. That's what it says on the

Page 108

1 top of the report, yes.
2 Q. Now, if you could, you see
3 the file number that says Page 2 of 94,
4 and then it goes up one per page?
5 A. Yes.
6 Q. Okay. Go to Page 9 of 94
7 for a second.
8 MR. WATTS: Now, if you
9 would blow up the first five
10 lines, Erik, of III (a)?
11 BY MR. WATTS:
12 Q. Now, you described autism
13 disorder first being described by Leo
14 Kanner in 1943.
15 Second paragraph, you said,
16 "The prevalence of ASD has increased
17 dramatically over the past five decades
18 in the United States"; is that right?
19 A. That's what it says, yes.
20 Q. All right. Now, I want to
21 talk to you about prevalence in some
22 detail for a little bit.
23 Between 1997 and 2007, do
24 the prevalence rates of autism increase

Page 109

1 in the United States?
2 A. The prevalence increased.
3 I'm not sure the incidence did.
4 Q. I'm asking about prevalence
5 rates right now, okay?
6 A. So according to
7 prevalence-based studies, depending on
8 the methods, most rates increased.
9 Q. And let me show you
10 Exhibit 414 where you've said this, just
11 real briefly.
12 (Document marked for
13 identification as Exhibit
14 Kolevzon 414.)
15 BY MR. WATTS:
16 Q. And we'll talk about
17 prevalence versus incidence here in a
18 second.
19 Did you write an article in
20 2007 entitled, "Prenatal and Perinatal
21 Risk Factors for Autism: A review and
22 integration of findings," with Dr. Gross
23 and Dr. Reichenberg?
24 A. I did.

<p style="text-align: right;">Page 110</p> <p>1 Q. And on Page 326 there's a 2 sentence in there that says, "Prevalence 3 rates of both autism and autism spectrum 4 disorders (ASDs) may have increased 5 markedly in the past decade"; is that 6 right?</p> <p>7 MS. BROWN: Can we give him 8 a second to find the page. Page 3 9 of the article.</p> <p>10 MR. WATTS: No, I said 11 Page 326, which is the first page.</p> <p>12 THE WITNESS: Are you 13 referring to the abstract or 14 the --</p> <p>15 MS. BROWN: Right here.</p> <p>16 THE WITNESS: Ah, okay. 17 That's convenient. 18 Yes, I think it's inarguable 19 that prevalence rates have 20 increased.</p> <p>21 BY MR. WATTS:</p> <p>22 Q. Okay. And then in the next 23 column it says, "Although this increase 24 may be artifactual to some degree, it may</p>	<p style="text-align: right;">Page 112</p> <p>1 Q. And what I'm -- 2 MS. BROWN: Let him finish. 3 Let him finish.</p> <p>4 BY MR. WATTS: 5 Q. Yeah, go ahead. 6 MR. WATTS: We're going to 7 get to those. 8 MS. BROWN: I know. But let 9 him at least answer your question 10 and then you can follow up. 11 Go ahead.</p> <p>12 THE WITNESS: You had said 13 that -- something to the effect of 14 because there's an increase in 15 prevalence, that must mean 16 environmental factors, and I don't 17 think that that's true --</p> <p>18 BY MR. WATTS: 19 Q. I actually said -- 20 MS. BROWN: Wait. Wait. 21 Please, Mr. Watts, let him finish. 22 MR. WATTS: I'm sorry. 23 MS. BROWN: Go ahead, sir. 24 MR. WATTS: I actually said,</p>
<p style="text-align: right;">Page 111</p> <p>1 also reflect a true increase in the 2 incidence of ASD and implicates an 3 important role of environmental causes." 4 Did I read that correctly?</p> <p>5 A. You read it correctly. And 6 it reflects the idea that there are some 7 nonheritable causes and that they're 8 important to try to identify.</p> <p>9 Q. And I think your point is 10 that if you have this dramatic increase 11 of autism spectrum disorder cases, our 12 genes don't change that fact. So if 13 there is, in fact, a true increase, it 14 has to be explained by something other 15 than genetics; is that right?</p> <p>16 MS. BROWN: Objection. 17 Lacks foundation.</p> <p>18 THE WITNESS: So my opinion 19 about the true increase and 20 prevalence relates more to other 21 factors, like changing diagnostic 22 criteria, younger age of 23 diagnosis --</p> <p>24 BY MR. WATTS:</p>	<p style="text-align: right;">Page 113</p> <p>1 "If there is a true increase." 2 MS. BROWN: I know, but he's 3 got to at least finish and then 4 you can follow up.</p> <p>5 BY MR. WATTS: 6 Q. Go ahead. Go ahead. I 7 didn't mean to cut you off. Go ahead. 8 A. Okay. 9 So the fact that there's an 10 increase in prevalence does not 11 necessarily reflect the presence of 12 environmental risk factors.</p> <p>13 Q. Could be artifactual, but if 14 it's not artifactual, it has to be 15 environmental. Agreed?</p> <p>16 A. I don't think it has to be 17 anything. I think that there could be 18 other factors that we are, as of yet, 19 unaware of.</p> <p>20 Q. Okay. So let's talk about 21 whether it's artifactual. 22 But before we go there, 23 let's -- let's talk about the increase of 24 prevalence over time.</p>

<p style="text-align: right;">Page 114</p> <p>1 Let me show you Exhibit 417. 2 (Document marked for 3 identification as Exhibit 4 Kolevzon 417.) 5 BY MR. WATTS: 6 Q. Do you know who 7 Dr. Hertz-Picciotto is? 8 A. I don't know her personally. 9 Q. But you published with her? 10 A. I may have been on papers 11 with her, but I don't know her. 12 Q. Okay. And she did a lot of 13 work with respect to the increase in 14 prevalence in -- shown in certain 15 databases out in California; is that 16 right? 17 MS. BROWN: Objection. 18 Lacks foundation. 19 THE WITNESS: I know that 20 she works with some California 21 databases, yes. 22 BY MR. WATTS: 23 Q. And if you go to Page 3 of 24 20.</p>	<p style="text-align: right;">Page 116</p> <p>1 I apologize. 2 THE WITNESS: Thanks. 3 BY MR. WATTS: 4 Q. Just go to Page 3 of 20, and 5 I'm going to ask you about the data. And 6 then you and I are going to talk about 7 the different reasons that you think it's 8 artifactual. 9 A. Yeah, okay. I just want to 10 look at the way the study was done. 11 MS. BROWN: Okay. Give us a 12 second to organize our exhibits. 13 THE WITNESS: I'm going to 14 need more time with this paper. I 15 mean, I have not seen this paper 16 before. So if you are going to 17 ask me questions about it, I need 18 more time to review it. 19 BY MR. WATTS: 20 Q. Well, let me just ask you -- 21 and I want to be fair to you. 22 This is something you 23 haven't seen before? 24 A. Correct.</p>
<p style="text-align: right;">Page 115</p> <p>1 A. Hold on. Hold on one 2 second. Let me just look at the 3 abstract. 4 MS. BROWN: I think we only 5 have a page. 6 If this is Exhibit 417 -- 7 are we looking at the same thing? 8 THE WITNESS: "The Rise in 9 Autism and the Role of Age at 10 Diagnosis." 11 MS. BROWN: Is that it? Our 12 hardcopy just has one page. 13 MR. WATTS: There's one page 14 in your folder? 15 THE WITNESS: Two pages. 16 MS. BROWN: It looks -- 17 Mr. Watts, it looks like it's just 18 the abstract. 19 MR. WATTS: That's odd. 20 Here, let me give you mine. 21 MS. BROWN: Okay. 22 MR. WATTS: Will you make 23 sure that we substitute the right 24 one in there?</p>	<p style="text-align: right;">Page 117</p> <p>1 Q. Okay. And then last 2 question, and then we'll go on, because I 3 don't want to talk to you about something 4 that you haven't seen. 5 Just on the results on 6 Page 3 of 20. Do you see how it says, 7 "Autism incidence in children rose 8 throughout the period. Cumulative 9 incidence to five years of age per 10,000 10 births rose from 6.2 for 1990 births to 11 42.5 for 2001 births"? 12 MS. BROWN: And I'll just 13 object. The witness asked for 14 more time with a paper he's never 15 seen. 16 So if you want to ask him 17 about the paper, that's fine. He 18 just needs time to look at it. 19 BY MR. WATTS: 20 Q. I'm just asking about this 21 one sentence. 22 Do you see that, sir? 23 MS. BROWN: Well, I object 24 as lacking foundation.</p>

<p style="text-align: right;">Page 118</p> <p>1 BY MR. WATTS:</p> <p>2 Q. Go ahead.</p> <p>3 A. So I see that that's what's</p> <p>4 written on the page, but I have no way to</p> <p>5 evaluate it.</p> <p>6 Q. And the way I want to ask</p> <p>7 the question is this:</p> <p>8 The difference between 6.2</p> <p>9 and 42.5, how would you express that</p> <p>10 change in rate?</p> <p>11 A. Again, I think it --</p> <p>12 MS. BROWN: Object. It</p> <p>13 lacks foundation. I object.</p> <p>14 He's never seen this article</p> <p>15 before and he asked for more time</p> <p>16 to answer your question.</p> <p>17 So I object.</p> <p>18 MR. WATTS: You can have a</p> <p>19 running objection.</p> <p>20 BY MR. WATTS:</p> <p>21 Q. Go ahead.</p> <p>22 A. I seek to understand the</p> <p>23 methods of the paper. I need to</p> <p>24 understand the cohort, the rigor, the</p>	<p style="text-align: right;">Page 120</p> <p>1 MS. BROWN: I object as</p> <p>2 lacking foundation.</p> <p>3 THE WITNESS: I think the</p> <p>4 consensus in the scientific</p> <p>5 community is the prevalence of</p> <p>6 autism is increasing. And the</p> <p>7 reason it is increasing is because</p> <p>8 of a number of different factors.</p> <p>9 But, yes, you would probably</p> <p>10 label those artifactual.</p> <p>11 MR. WATTS: Okay.</p> <p>12 Objection. Nonresponsive.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. I'm asking about you and</p> <p>15 your report.</p> <p>16 And in your report you</p> <p>17 suggest five artifactual reasons that</p> <p>18 explain whatever the rate increase is,</p> <p>19 right?</p> <p>20 A. My report reflects on the</p> <p>21 reasons that the prevalence rates have</p> <p>22 gone up.</p> <p>23 Q. Okay.</p> <p>24 A. And my opinion is that there</p>
<p style="text-align: right;">Page 119</p> <p>1 science.</p> <p>2 Q. Okay. And my question is,</p> <p>3 what's the difference between 6.2 and</p> <p>4 42.5, mathematically?</p> <p>5 A. Well, if you want a</p> <p>6 mathematical --</p> <p>7 Q. Yeah.</p> <p>8 A. It's times seven.</p> <p>9 Q. Okay. So seven-times</p> <p>10 increase, right?</p> <p>11 MS. BROWN: Objection.</p> <p>12 Lacks foundation.</p> <p>13 THE WITNESS: That's the</p> <p>14 quantitative difference, but I</p> <p>15 don't know how that relates or how</p> <p>16 that's relevant to the incidence</p> <p>17 of autism.</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Okay. So the reason I ask</p> <p>20 about this is this seven-time difference,</p> <p>21 quantitatively, between 1990 and 2001, in</p> <p>22 your report, you have four or five</p> <p>23 artifactual reasons that you think that</p> <p>24 difference exists, right?</p>	<p style="text-align: right;">Page 121</p> <p>1 isn't a true increase in the -- in the</p> <p>2 incidence.</p> <p>3 And if there is one paper</p> <p>4 that says that there is, I need to</p> <p>5 evaluate that paper more, in order to</p> <p>6 comment.</p> <p>7 Q. I understand.</p> <p>8 Now I want to talk to you</p> <p>9 about the incidence increase over the</p> <p>10 last decade.</p> <p>11 Can I have that back? And</p> <p>12 then I'll get you a copy during the</p> <p>13 break.</p> <p>14 MR. WATTS: Will you go get</p> <p>15 that?</p> <p>16 MS. BROWN: Do you want to</p> <p>17 take a break now so we can get him</p> <p>18 a copy before you start --</p> <p>19 MR. WATTS: We're going to</p> <p>20 go on to something else. Let me</p> <p>21 finish this section and we'll take</p> <p>22 a break.</p> <p>23 MS. BROWN: Okay. And I'll</p> <p>24 just continue to object to the</p>

<p style="text-align: right;">Page 122</p> <p>1 extent the witness needs a copy --</p> <p>2 MR. WATTS: Yes.</p> <p>3 MS. BROWN: -- and time to</p> <p>4 review before he answers questions</p> <p>5 about a paper he's said he has</p> <p>6 never seen before.</p> <p>7 MR. WATTS: Let's go to one</p> <p>8 you wrote. Exhibit 422.</p> <p>9 (Document marked for</p> <p>10 identification as Exhibit</p> <p>11 Kolevzon 422.)</p> <p>12 THE WITNESS: Ah, first</p> <p>13 edition.</p> <p>14 BY MR. WATTS:</p> <p>15 Q. There you go.</p> <p>16 You wrote this in 2011,</p> <p>17 right?</p> <p>18 A. I think this was published</p> <p>19 in 2011. I probably wrote it before</p> <p>20 then, but...</p> <p>21 Q. Go to Page 568.</p> <p>22 A. 568.</p> <p>23 Q. It's in the very back.</p> <p>24 By the way, just for the</p>	<p style="text-align: right;">Page 124</p> <p>1 A. I did.</p> <p>2 Q. Okay. Was he your boss</p> <p>3 between 2000 and 2009?</p> <p>4 A. No, he was my boss between</p> <p>5 2007 and 2009.</p> <p>6 Q. Okay. Is he a medical</p> <p>7 doctor that you respect?</p> <p>8 A. I respect Dr. Hollander.</p> <p>9 Q. Okay. He is a fine</p> <p>10 researcher in the field of autism</p> <p>11 spectrum disorders, right?</p> <p>12 A. Dr. Hollander does a lot of</p> <p>13 research in autism. I don't always agree</p> <p>14 with his conclusions, but he does a lot</p> <p>15 of research.</p> <p>16 Q. And, again, I'm not trying</p> <p>17 to get you to say something to get you in</p> <p>18 trouble with your buddies.</p> <p>19 But in science, you can have</p> <p>20 two different outstanding researchers who</p> <p>21 both employ sound science and can come up</p> <p>22 with this different opinions, right?</p> <p>23 MS. BROWN: Well, I object</p> <p>24 as vague.</p>
<p style="text-align: right;">Page 123</p> <p>1 record, there are three book chapters</p> <p>2 that you included in here. I'm going to</p> <p>3 the third one.</p> <p>4 You wrote three. So 568 is</p> <p>5 towards the back. Chapter 47, "Future</p> <p>6 Directions."</p> <p>7 A. "Future Directions." Okay.</p> <p>8 Q. And by the way, if we go to</p> <p>9 567 --</p> <p>10 MR. WATTS: Erik, the</p> <p>11 previous page, please.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. This is a book chapter that</p> <p>14 you wrote with Eric Hollander. Did you</p> <p>15 work with Dr. Hollander at Mount Sinai</p> <p>16 for a number of years?</p> <p>17 A. I did, yes.</p> <p>18 Q. How long did you work</p> <p>19 together with Eric Hollander?</p> <p>20 A. I think Eric -- I was in</p> <p>21 Mount Sinai from 2000. Eric was there</p> <p>22 well before me, and I think he was there</p> <p>23 until 2009. So about nine years.</p> <p>24 Q. Did you work under him?</p>	<p style="text-align: right;">Page 125</p> <p>1 Are you talking about</p> <p>2 generally or are you talking about</p> <p>3 related to his opinions in this</p> <p>4 case?</p> <p>5 BY MR. WATTS:</p> <p>6 Q. Go ahead.</p> <p>7 A. I think --</p> <p>8 MS. BROWN: Same objection.</p> <p>9 Go ahead.</p> <p>10 THE WITNESS: I think it</p> <p>11 depends on what the issue is and</p> <p>12 what the data show.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. Okay. But my point is, is</p> <p>15 that Dr. Kolevzon is an autism spectrum</p> <p>16 disorder researcher for whom you hold the</p> <p>17 highest regard?</p> <p>18 MS. BROWN: He is</p> <p>19 Dr. Kolevzon.</p> <p>20 THE WITNESS: Dr. Kolevzon?</p> <p>21 I am Dr. Kolevzon.</p> <p>22 BY MR. WATTS:</p> <p>23 Q. Well, I knew that one was</p> <p>24 true. I meant Dr. --</p>

Page 126

1 MS. BROWN: So he is very,
2 very well respected.
3 THE WITNESS: I like to
4 think I'm more humble than that,
5 but...
6 BY MR. WATTS:
7 Q. You know, if we can't laugh
8 about moments like that, you can't laugh.
9 Other than holding yourself
10 in high regard, you hold Dr. Hollander in
11 high regard as an outstanding researcher
12 in the -- in the field of autism spectrum
13 disorder?
14 MS. BROWN: Same objection.
15 BY MR. WATTS:
16 Q. Go ahead.
17 A. I respect Dr. Hollander as a
18 well-intentioned, thoughtful scientist.
19 Q. How about Dr. Coyle?
20 A. I respect Dr. Coyle as a
21 well-intentioned, thoughtful scientist.
22 Q. Okay. And if we go to the
23 next page, under "Prevalence," the three
24 of you write, "The prevalence of autism

Page 127

1 continues to grow. The most recent
2 Center for Disease Control and Prevention
3 estimates suggest 1 in 110 persons have
4 an ASD, which is higher than the earlier
5 estimates of 1 in 150 affected
6 individuals."
7 Did I read that right?
8 A. Yes.
9 Q. Let's move forward to
10 Exhibit 479, which is your report in the
11 Daniels-Feasel case.
12 Page 9 of 94. Now we are in
13 November of 2018?
14 And by here, in
15 Paragraph III (a), you say the prevalence
16 rate is 1 in 59; is that right?
17 A. I'm quoting the CDC.
18 Q. Okay. And then let's go to
19 2021. Exhibit 491.
20 (Document marked for
21 identification as Exhibit
22 Kolevzon 491.)
23 BY MR. WATTS:
24 Q. Do you recall a paper you

Page 128

1 wrote with Dr. Katz?
2 MS. BROWN: Hang on. 491?
3 MR. WATTS: Yes, ma'am.
4 BY MR. WATTS:
5 Q. Julia Katz?
6 MS. BROWN: Hang on. We're
7 getting it out.
8 BY MR. WATTS:
9 Q. Is Julia Katz an autism
10 researcher you respect?
11 A. Julia was a resident in
12 general psychiatry. So she is not an
13 autism researcher, no. She did autism
14 research in this case.
15 Q. Yeah. I mean, we all start
16 off as a resident, right?
17 A. Basically. I mean...
18 Q. Some of us are such
19 outstanding researchers we can write
20 books during our residency, can't we?
21 A. Some of us.
22 Q. Abraham Reichenberg was not
23 in his residency when he co-authored this
24 article with you, right?

Page 129

1 A. Dr. Reichenberg is a -- is
2 an epidemiologist and Ph.D., so he
3 doesn't do a residency.
4 Q. Okay. Go to Page 2. The
5 introduction.
6 The three of you, with
7 respect to prevalence at this time, and
8 we're now in March of 2021, say, "The
9 prevalence of ASD has been increasing in
10 recent decades and current estimates from
11 the Center for Disease Control (CDC)
12 suggest that 1 in 54 children in the U.S.
13 aged eight years has ASD."
14 Did I read that right?
15 A. Yeah, those were the CDC
16 rates at the time that we published this.
17 Q. And then lastly,
18 Exhibit 568.
19 (Document marked for
20 identification as Exhibit
21 Kolevzon 568.)
22 BY MR. WATTS:
23 Q. I saw in your supplemental
24 disclosure last night that you read the

Page 130

1 transcript of Wendy Chung's deposition.
 2 A. I did, yeah.
 3 Q. Let me show you Exhibit 568,
 4 which is a PowerPoint that she published
 5 on April 25th of 2023, entitled, "SPARK
 6 and the Future of Autism Research."
 7 MS. BROWN: Yeah. I'll just
 8 object to the form as inconsistent
 9 with her testimony about this.
 10 Go ahead.
 11 MR. WATTS: Okay. And I
 12 will stipulate that what she
 13 testified to is inconsistent with
 14 what she's written.
 15 I'm kidding. Let's go on.
 16 MS. BROWN: I get the sense
 17 that you guys think that. I think
 18 it's --
 19 BY MR. WATTS:
 20 Q. By the way, Doctor, Alli and
 21 I are good friends, and we can joust.
 22 It's nothing personal.
 23 A. I was told not to do any
 24 humor, so...

Page 131

1 Q. Try not to be funny.
 2 Let's go to Page 7, please.
 3 MS. BROWN: Which in and of
 4 itself is hilarious.
 5 All right. We're focusing
 6 on Exhibit 560?
 7 MR. WATTS: 8.
 8 MS. BROWN: 8.
 9 BY MR. WATTS:
 10 Q. And in April 2023 Dr. Chung
 11 says, "The prevalence of autism,
 12 according to 2020 data, has increased to
 13 1 in 36 eight-year-old children."
 14 Do you see that?
 15 A. I see what's written on the
 16 screen, yes.
 17 Q. All right. Now, let me show
 18 you Exhibit 543, just for a second.
 19 MS. BROWN: And this is the
 20 last one?
 21 MR. WATTS: We'll take our
 22 break after this.
 23 MS. BROWN: Great.
 24 (Document marked for

Page 132

1 identification as Exhibit
 2 Kolevzon 543.)
 3 BY MR. WATTS:
 4 Q. I took the studies we just
 5 went through, between 2011 and 2023, and
 6 without making you retread all these
 7 numbers, I'm sure somebody at the fine
 8 firm where Alli comes from will check my
 9 math.
 10 Can we agree that the rate
 11 of reported ASD from 2011 to 2023 has
 12 increased during those 12-year period?
 13 MS. BROWN: Okay. And I'll
 14 object.
 15 Can you tell us what this
 16 is.
 17 Did you make this, Mr.
 18 Watts?
 19 MR. WATTS: I did.
 20 MS. BROWN: Okay. So I'm
 21 going to object as lacking
 22 foundation to this un-cited,
 23 lawyer-created chart.
 24 BY MR. WATTS:

Page 133

1 Q. Just the ones we just read
 2 in show an increase between 2011 and 2023
 3 in the rate of ASD prevalence reported
 4 over that time, right?
 5 A. So over this period of time,
 6 there have been dramatic changes that
 7 have contributed to the increase in
 8 prevalence of autism.
 9 Q. Okay.
 10 A. The CDC, whose rates you've
 11 quoted, uses a methodology that, by
 12 itself, inflates the rates. And so if
 13 you're asking me whether or not rates
 14 have gone up, prevalence rates, over the
 15 last 12 years, the answer is yes,
 16 undoubtedly.
 17 Q. Okay. With respect to the
 18 issue of whether the rates of reported
 19 ASD have gone up, we can agree that that
 20 has happened. You just say there are
 21 reasons for it that are artifactual,
 22 fair?
 23 A. Fair.
 24 MR. WATTS: Okay. We're

<p style="text-align: right;">Page 134</p> <p>1 going to take our break and then</p> <p>2 we're going to talk about those</p> <p>3 reasons.</p> <p>4 THE WITNESS: Great.</p> <p>5 MR. WATTS: All right.</p> <p>6 THE VIDEOGRAPHER: The time</p> <p>7 right now is 9:40 a.m. We are off</p> <p>8 the record.</p> <p>9 (Short break.)</p> <p>10 THE VIDEOGRAPHER: The time</p> <p>11 right now is 10:00 a.m. We're</p> <p>12 back on the record.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. I want to go back to the</p> <p>15 Katz paper that you co-authored in March</p> <p>16 of 2021, Exhibit 491.</p> <p>17 And the purpose of the</p> <p>18 review says, "Given the ongoing rise in</p> <p>19 prevalence of autism spectrum disorder</p> <p>20 (ASD)" -- and then you go on to say,</p> <p>21 "There is an urgent need to identify</p> <p>22 modifiable risk factors for ASD."</p> <p>23 What is a modifiable risk</p> <p>24 factor?</p>	<p style="text-align: right;">Page 136</p> <p>1 factors that broadly include A, B, C, D,</p> <p>2 and E."</p> <p>3 Do you see that, sir?</p> <p>4 A. I do.</p> <p>5 MR. WATTS: Now, if you</p> <p>6 would put up Exhibit 545, just for</p> <p>7 a second, Erik.</p> <p>8 (Document marked for</p> <p>9 identification as Exhibit</p> <p>10 Kolevzon 545.)</p> <p>11 BY MR. WATTS:</p> <p>12 Q. What I've done is I've taken</p> <p>13 A, B, C, D, and E and put it into an</p> <p>14 Excel chart.</p> <p>15 And here is my question:</p> <p>16 First of all, under the</p> <p>17 explanation, did I correctly transpose</p> <p>18 from your report the five reasons that</p> <p>19 you posit explain the increase in the</p> <p>20 reported prevalence rate increase of ASD?</p> <p>21 A. Yeah. I think the only</p> <p>22 clarification I would make is it's not</p> <p>23 about calculating the prevalence rate,</p> <p>24 it's about the ascertainment.</p>
<p style="text-align: right;">Page 135</p> <p>1 A. It's one where you can</p> <p>2 manipulate the environment in some way or</p> <p>3 you can provide some sort of medication</p> <p>4 to either prevent or alleviate symptoms.</p> <p>5 Q. So a modifiable risk factor,</p> <p>6 by definition, relates to environmental</p> <p>7 causes of ASD?</p> <p>8 A. Not by definition and not</p> <p>9 exclusively. But environmental risk</p> <p>10 factors could be considered a modifiable</p> <p>11 risk factor, yes.</p> <p>12 Q. Okay. Now let's go into the</p> <p>13 reasons for the increase of the</p> <p>14 prevalence, and I want to refer you to</p> <p>15 your report, Exhibit 403, Pages 16 and</p> <p>16 17, and Paragraph 39. Can you pull that</p> <p>17 up.</p> <p>18 A. Sorry, page? Page what?</p> <p>19 Q. 16 and 17, Paragraph 39.</p> <p>20 Okay. Now, you acknowledge</p> <p>21 that prevalence rates have gone up, but</p> <p>22 you say, "It's unlikely the true</p> <p>23 incidence of ASD is increasing. This</p> <p>24 discrepancy is due to a combination of</p>	<p style="text-align: right;">Page 137</p> <p>1 Q. Okay. Now, here is my</p> <p>2 question:</p> <p>3 Each of these five factors</p> <p>4 that you listed in your report, for</p> <p>5 example, E, "changes in law and society,"</p> <p>6 you reference something that happened</p> <p>7 back in 1991, right?</p> <p>8 A. Yes.</p> <p>9 MR. WATTS: Okay. So, Erik,</p> <p>10 could you write "1991" under date.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Now, in C, for example,</p> <p>13 "younger age of diagnosis," you report</p> <p>14 this is something that happened back in</p> <p>15 2007, right?</p> <p>16 A. There are many factors that</p> <p>17 contributed to younger age of diagnosis.</p> <p>18 But in 2007 is when the recommendation</p> <p>19 from the American Academy of Pediatrics</p> <p>20 came out.</p> <p>21 MR. WATTS: Okay. Type in</p> <p>22 "2007" under B, Erik.</p> <p>23 TRIAL TECH: I'm sorry,</p> <p>24 under D or?</p>

<p>Page 138</p> <p>1 MR. WATTS: B.</p> <p>2 THE WITNESS: No, no.</p> <p>3 MR. WATTS: Apologies. Type</p> <p>4 in "2007" under C.</p> <p>5 BY MR. WATTS:</p> <p>6 Q. Now, under D, the</p> <p>7 "improvements in diagnostic</p> <p>8 ascertainment," you reference a</p> <p>9 behavioral tool called ADOS in your</p> <p>10 Daniels-Feasel report and then Autism</p> <p>11 Diagnostic Interview-Revised, an ADI-R,</p> <p>12 in that same report.</p> <p>13 You know what those are?</p> <p>14 A. I do.</p> <p>15 Q. And here is my question.</p> <p>16 From the standpoint of</p> <p>17 improvements of diagnostic ascertainment,</p> <p>18 the ADOS was created by Catherine Lord,</p> <p>19 Michael Rutter, Pamela DiLavore, and</p> <p>20 Susan Risi back in 1989, right?</p> <p>21 A. That's correct.</p> <p>22 Q. And the ADI-R was developed</p> <p>23 by Rutter, Ann Lecouteur, and Catherine</p> <p>24 Lord in 2003; is that right?</p>	<p>Page 140</p> <p>1 Is that what you said in</p> <p>2 that report?</p> <p>3 A. It's true that those are</p> <p>4 better measures to detect autism, but</p> <p>5 that's not necessarily --</p> <p>6 Q. And those better measures</p> <p>7 happened in 1989 and 2003, right?</p> <p>8 A. Right. But the ability to</p> <p>9 detect autism and ascertainment methods</p> <p>10 can sometimes be different.</p> <p>11 Q. Okay. With respect to this</p> <p>12 report, those are the two things that you</p> <p>13 referenced, right?</p> <p>14 A. So in this report, I'm</p> <p>15 talking about two different tools that</p> <p>16 were developed that improved our ability</p> <p>17 to detect autism.</p> <p>18 Q. That happened in 1989 and</p> <p>19 2003.</p> <p>20 A. Well, there have been</p> <p>21 multiple revisions over time that have</p> <p>22 improved the tools. But they were</p> <p>23 originally developed earlier, yes.</p> <p>24 Q. Okay.</p>
<p>Page 139</p> <p>1 A. Both those things are</p> <p>2 correct. But neither one of those things</p> <p>3 would I necessarily attribute to the</p> <p>4 improvement in diagnostic ascertainment.</p> <p>5 Q. Well, let's go and see what</p> <p>6 you said in Exhibit 479, which was your</p> <p>7 Daniels-Feasel report.</p> <p>8 Go to Page 10 of 94.</p> <p>9 MR. WATTS: You don't need</p> <p>10 to type Exhibit 479.</p> <p>11 MS. BROWN: Hang on. Do we</p> <p>12 have it? Did we already look at</p> <p>13 this one?</p> <p>14 THE WITNESS: Yeah.</p> <p>15 MS. BROWN: Okay. Let's</p> <p>16 just find it.</p> <p>17 MR. WATTS: 794. III (b).</p> <p>18 BY MR. WATTS:</p> <p>19 Q. And three lines down you</p> <p>20 say, "Finally, behavior assessment tools,</p> <p>21 such as the Autism Diagnostic Observation</p> <p>22 Schedule (ADOS) and the Autism Diagnostic</p> <p>23 Interview-Revised have improved our</p> <p>24 ability to detect autism."</p>	<p>Page 141</p> <p>1 MR. WATTS: Now go back to</p> <p>2 Exhibit 545, Erik.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. And so 1989 and 2003.</p> <p>5 The expansion of ASD</p> <p>6 diagnostic criteria. Are you talking</p> <p>7 about the iterations of the DSM?</p> <p>8 A. I am.</p> <p>9 Q. Okay. And if we look at the</p> <p>10 iterations of the DSM, the DSM-III was</p> <p>11 published what year?</p> <p>12 A. 1987.</p> <p>13 Q. Are you sure that wasn't the</p> <p>14 DSM-III-Revised?</p> <p>15 A. Oh, correct. Sorry.</p> <p>16 Q. 1980 -- let me just kind of</p> <p>17 lead you through this.</p> <p>18 1980 was the DSM-III, right?</p> <p>19 A. Correct.</p> <p>20 Q. 1987 was the</p> <p>21 DSM-III-Revised.</p> <p>22 A. R, yeah.</p> <p>23 Q. 1994 was the DSM-IV?</p> <p>24 A. Yes.</p>

Page 142

1 Q. And 2013 was the DSM-V?

2 A. Correct.

3 Q. Okay. So when we talk about

4 B, that would be the various iterations

5 of the DSM, the Diagnostic and

6 Statistical Manual, right?

7 A. Correct.

8 Q. All right. So that happened

9 between 1980 and 2013, right?

10 A. Yes. The most dramatic of

11 which probably was 2013.

12 Q. All right. Now, with

13 respect to A, the "methodological issues

14 in calculating prevalence rates," your

15 report references a study by Avchen,

16 right?

17 A. Yes.

18 Q. And basically what you're

19 saying is that because of the data found

20 in Avchen, the calculated prevalence rate

21 may be inaccurate; is that right?

22 A. So I need -- I need to make

23 a couple of comments about this.

24 Q. First of all, is that right,

Page 143

1 and then you can make your comment.

2 A. So Avchen is one paper which

3 supports my opinion.

4 Q. It's one you cited, right?

5 A. I cite it.

6 I have 20 years of

7 experience that support my opinion.

8 The consensus within the

9 scientific community supports my opinion.

10 But more importantly, I

11 don't think it's fair to assign a

12 specific date to these dynamic issues

13 that have been unfolding for the last

14 50 years.

15 Q. Avchen looked at

16 177 children in Atlanta who were born in

17 1997 and went to public schools in 2005,

18 right?

19 A. Yeah.

20 Q. Did you cite to any other

21 specific studies referencing

22 methodological issues in calculating

23 prevalence rates, other than Avchen?

24 A. It's commonly accepted

Page 144

1 that --

2 MS. BROWN: Well, let him

3 finish and then you can follow up.

4 Go ahead.

5 THE WITNESS: It's commonly

6 accepted that the diagnosis of

7 autism requires a clinician to

8 observe a child, and that

9 requirement is not embedded within

10 the ADDM, the CDC criteria.

11 And when Avchen went and

12 looked at a subset of people who

13 had been diagnosed, according to

14 the CDC criteria, found that a

15 certain percentage did not meet

16 criteria.

17 BY MR. WATTS:

18 Q. Okay.

19 A. And that's consistent across

20 clinics and that's consistent across the

21 literature. And that -- that's just the

22 way that the scientific community accepts

23 the increase in prevalence.

24 Q. What was my question?

Page 145

1 A. Your question was whether --

2 well, why don't you repeat your question.

3 Q. Sure.

4 Did you cite to any other

5 studies in support of your proposition

6 other than Avchen?

7 A. I provided Avchen as a

8 reference.

9 Q. As an example?

10 A. But not to imply that that's

11 the only reference --

12 Q. Sure.

13 A. -- or that that's the

14 totality of the literature that I'm

15 relying on.

16 Q. Sure. But you understand

17 when you write a report and you drop

18 footnotes, I'm going to read those

19 footnotes.

20 A. Yeah.

21 MS. BROWN: Objection.

22 BY MR. WATTS:

23 Q. And if you cite one example,

24 and I go read it and can joust about that

<p style="text-align: right;">Page 146</p> <p>1 one example. And then you come in and</p> <p>2 say, oh, it's conclusive, the scientific</p> <p>3 community knows this, and like that, that</p> <p>4 doesn't provide me with any other studies</p> <p>5 that back it up, does it?</p> <p>6 MS. BROWN: No. I object.</p> <p>7 That lacks foundation. It's</p> <p>8 argumentive, and it's also false.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. Go ahead.</p> <p>11 A. I think it's clear, based on</p> <p>12 my record and my experience and my</p> <p>13 publications, that I'm considered an</p> <p>14 expert. I think it's clear that I can be</p> <p>15 representing the scientific community</p> <p>16 under what the consensus is as it relates</p> <p>17 to these issues. And I think it's clear</p> <p>18 that, in general, these are the themes</p> <p>19 that explain the increase in prevalence</p> <p>20 rates.</p> <p>21 Q. Okay. So was Avchen ever</p> <p>22 replicated?</p> <p>23 A. I think there was one other</p> <p>24 study, but I can't recall it off the top</p>	<p style="text-align: right;">Page 148</p> <p>1 Q. Did they state, we used</p> <p>2 rules to resolve discordance between ASD</p> <p>3 diagnostic measures that have not been</p> <p>4 studied or replicated in published</p> <p>5 research?</p> <p>6 MS. BROWN: Where are we?</p> <p>7 THE WITNESS: Yeah, I'm not</p> <p>8 sure where we are.</p> <p>9 MS. BROWN: Can you show us</p> <p>10 where we are? It's not matching</p> <p>11 up --</p> <p>12 MR. WATTS: Sure. Erik</p> <p>13 highlighted it.</p> <p>14 MS. BROWN: I know, just we</p> <p>15 want to match it up --</p> <p>16 THE WITNESS: What page?</p> <p>17 BY MR. WATTS:</p> <p>18 Q. It's on 235. First column,</p> <p>19 first full paragraph. And it's being</p> <p>20 highlighted on the big screen right in</p> <p>21 front of you.</p> <p>22 A. 235.</p> <p>23 MS. BROWN: I think we might</p> <p>24 have a different article printed.</p>
<p style="text-align: right;">Page 147</p> <p>1 of my head.</p> <p>2 Q. Did Avchen state, we have</p> <p>3 used rules to resolve discordance between</p> <p>4 ASD diagnostic measures that have not</p> <p>5 been studied or replicated in published</p> <p>6 research?</p> <p>7 A. If you want to discuss the</p> <p>8 Avchen article at length, I need to pull</p> <p>9 it out and review it.</p> <p>10 MR. WATTS: Okay.</p> <p>11 Exhibit 420, Page 235.</p> <p>12 (Document marked for</p> <p>13 identification as Exhibit</p> <p>14 Kolevzon 420.)</p> <p>15 BY MR. WATTS:</p> <p>16 Q. The question is did they</p> <p>17 state that.</p> <p>18 First column, first full</p> <p>19 paragraph, fourth line.</p> <p>20 MR. WATTS: Blow it up.</p> <p>21 No, first full paragraph.</p> <p>22 "Several limitations in this</p> <p>23 study deserve consideration."</p> <p>24 BY MR. WATTS:</p>	<p style="text-align: right;">Page 149</p> <p>1 Do you see this?</p> <p>2 THE WITNESS: It's -- I</p> <p>3 don't have -- I mean, 235 is</p> <p>4 Page 1. It doesn't --</p> <p>5 MS. BROWN: Yeah, we have a</p> <p>6 different copy printed here, you</p> <p>7 guys.</p> <p>8 What is the date?</p> <p>9 MR. WATTS: Erik, pull up</p> <p>10 the paragraph, please.</p> <p>11 TRIAL TECH: They're trying</p> <p>12 to -- I'm trying to help them --</p> <p>13 MR. WATTS: I want you to</p> <p>14 blow up the paragraph that --</p> <p>15 MS. BROWN: I think we just</p> <p>16 need to get coordinated, because</p> <p>17 we're looking at something totally</p> <p>18 different.</p> <p>19 MR. WATTS: Okay. It sounds</p> <p>20 like we had a bad copy job, so I</p> <p>21 apologize for that.</p> <p>22 MS. BROWN: No worries.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. Yeah. Can you see the</p>

Page 150

1 screen, sir?

2 A. Yeah.

3 Q. Can you see the words, "We

4 use rules to resolve discordance between

5 ASD diagnostic measures that have not

6 been studied or replicated in published

7 research"?

8 MS. BROWN: And, Mr. Watts,

9 I don't mean to be difficult, but

10 we don't have this document in

11 front of us, and I think he needs

12 to see it just to be able to

13 accurately answer your questions.

14 So can we just resolve that?

15 MR. WATTS: Take -- take my

16 copy too.

17 MS. BROWN: All right.

18 MR. WATTS: I don't know

19 what happened to your copy. I

20 apologize.

21 MS. BROWN: All right. No

22 worries. Thanks very much.

23 Thanks very much. Thank you.

24 BY MR. WATTS:

Page 151

1 Q. 235.

2 A. Oh, it's a different

3 pagination altogether. Okay.

4 MS. BROWN: Okay. All

5 right.

6 BY MR. WATTS:

7 Q. Do you see the words --

8 A. I just -- I need to

9 understand the context. I'm sorry. I

10 appreciate these are limitations that the

11 authors are citing. I just want to

12 understand in what context.

13 Q. Okay. And before we get to

14 the full context, do the words, "We used

15 the rules to resolve discordance between

16 ASD diagnostic measures that have not

17 been studied or replicated in published

18 research," is that in there?

19 A. Those are the words that are

20 written on the page.

21 Q. All right.

22 MS. BROWN: And we can

23 resolve this on a break, but both

24 of the copies seem to go up to 236

Page 152

1 and then back down to 233. So I

2 don't --

3 MR. WATTS: Look, I would

4 assume that whoever they sent out

5 the copies to screwed up and used

6 the digital version that I've

7 given you.

8 But if there's a problem,

9 let me know, and I'll give you

10 mine just like I did. I don't

11 have a --

12 MS. BROWN: Yours is printed

13 with the same issue. So I just

14 want to -- I just want to make

15 sure we have the complete study --

16 MR. WATTS: Of course.

17 MS. BROWN: -- and

18 Dr. Kolevzon has a chance to

19 refresh on it so we can accurately

20 answer your questions.

21 So if you need a minute with

22 whatever we have in front of us,

23 please take a minute. Let's make

24 sure we're all on the same page

Page 153

1 before you answer.

2 THE WITNESS: Do you have

3 additional questions?

4 BY MR. WATTS:

5 Q. No, that was the question.

6 And then my next question

7 is, in Avchen, did they have

8 misclassified children who were

9 incorrectly transferred from case to

10 non-case status as well?

11 A. So, again, if we want to

12 talk about Avchen in detail, I need to

13 review this paper again.

14 Q. Sure.

15 A. Okay.

16 Q. Right up above that

17 paragraph.

18 Do you see where it says,

19 "Several more misclassified children were

20 incorrectly" --

21 A. Sorry. I have to go back to

22 the methods. This is -- you know, you're

23 asking me to comment on --

24 MS. BROWN: Take as long as

Page 154

1 you need.

2 BY MR. WATTS:

3 Q. I'm really not asking you to

4 comment. I'm asking you, can you see the

5 words on the paper?

6 MS. BROWN: Yeah, but in

7 order to answer your question, he

8 needs to look --

9 MR. WATTS: He needs to look

10 at the paper and tell me whether

11 it's there. We don't need to

12 waste ten minutes reading all

13 these articles.

14 MS. BROWN: But -- well, I

15 just don't think that's fair, sir.

16 If he wanted to comment -- hang

17 on --

18 MR. WATTS: I'm not asking

19 for a comment --

20 MS. BROWN: Hold on. Let me

21 put my objection on the record.

22 MR. WATTS: Okay.

23 MS. BROWN: The witness has

24 been given a document. He's asked

Page 155

1 for a moment to review and refresh

2 on the document to accurately and

3 truthfully provide testimony in

4 this deposition.

5 So I'm going to object to

6 anything that doesn't allow him

7 enough time to do that.

8 MR. WATTS: Okay. Your

9 objection is noted.

10 BY MR. WATTS:

11 Q. And my question is, can you

12 see on the screen, "Several more

13 misclassified children were incorrectly

14 transferred from case to non-case

15 status"?

16 A. I'm able to read those words

17 on the screen. I'm not able to interpret

18 the meaning or the significance of them.

19 Q. Now, this article that you

20 want to read is one that you cited in

21 your report, right?

22 A. Correct.

23 Q. Okay. Now, Avchen was dated

24 what year?

Page 156

1 A. 2011.

2 Q. Now, with respect to -- go

3 back to 545 for a second.

4 I want to talk about this

5 expansion of diagnostic criteria.

6 In your report, you cite to

7 a paper by Wazana. Do you know

8 Dr. Wazana?

9 A. I do not.

10 Q. And Wazana, is that the one

11 source she gave with respect to the issue

12 of the expansion of ASD diagnostic

13 criteria, Footnote 27?

14 A. Sorry, can you repeat the

15 question?

16 Q. Sure.

17 Exhibit 403 --

18 MS. BROWN: Is that your --

19 I think we're on your report.

20 MR. WATTS: Yes.

21 THE WITNESS: The Wazana

22 paper.

23 Oh, you're talking about my

24 reference in the report to Wazana?

Page 157

1 MS. BROWN: Yep.

2 THE WITNESS: Oh, okay.

3 So what was the question?

4 BY MR. WATTS:

5 Q. Sure. Paragraph 42.

6 MS. BROWN: Paragraph 42 of

7 your report.

8 MR. WATTS: Exhibit 403.

9 THE WITNESS: That's my

10 report.

11 MR. WATTS: Page 18,

12 Paragraph 42.

13 THE WITNESS: 42. Yep.

14 BY MR. WATTS:

15 Q. You say, "Additional factors

16 that could drive ASD prevalence rates

17 higher have been described in published

18 literature," and you provide Wazana in

19 2007; is that right?

20 A. Yes.

21 Q. Now, here is my question:

22 With respect to Wazana, have

23 you read any articles that criticize the

24 work by Wazana as being not legitimate?

<p style="text-align: right;">Page 158</p> <p>1 MS. BROWN: Objection.</p> <p>2 Vague.</p> <p>3 THE WITNESS: I may or may</p> <p>4 not have. I don't recall at this</p> <p>5 point.</p> <p>6 MR. WATTS: Pull up 417,</p> <p>7 Hertz-Picciotto paper from January</p> <p>8 of 2009.</p> <p>9 Now, is this a study that</p> <p>10 you told me you had not read</p> <p>11 before?</p> <p>12 A. I believe so.</p> <p>13 Q. Okay. Go to Page 8 and 9,</p> <p>14 and put them up split screen so we can</p> <p>15 see them both.</p> <p>16 MS. BROWN: Okay. Hold on.</p> <p>17 This is the one we --</p> <p>18 THE WITNESS: This is the</p> <p>19 one that we don't have --</p> <p>20 MS. BROWN: It's okay.</p> <p>21 MR. WATTS: Okay. Hold on.</p> <p>22 Hold on. I'll give it to you.</p> <p>23 Put up 8 and 9 on the split</p> <p>24 screen, Erik, please. Thank you.</p>	<p style="text-align: right;">Page 160</p> <p>1 Specifically, they rely on a reported</p> <p>2 analysis of DDS data used follow-up to a</p> <p>3 specific calendar date rather than to a</p> <p>4 specific age. This inflates the decline</p> <p>5 in age at diagnosis because children from</p> <p>6 recent birth cohorts are too young for</p> <p>7 calculation of diagnosed at older age.</p> <p>8 Using longer follow-up and equivalent</p> <p>9 follow-up periods, we recalculated the</p> <p>10 mean age at diagnosis for birth cohorts</p> <p>11 from 1990 to 1996 to be 5.23, 5.16, 5.12,</p> <p>12 5.18, 5.02, 4.90, 4.83, a tenfold smaller</p> <p>13 shift (0.14 years between 1991 and 1994)</p> <p>14 than what was assumed in the simulation</p> <p>15 study of 1.6 years. This shift is</p> <p>16 evident from our Figure 4.</p> <p>17 "Secondly, the extremely</p> <p>18 large increases found in the simulation</p> <p>19 observed only in the analysis of</p> <p>20 cumulative incidence to age four years</p> <p>21 (labeled 'prevalence' by the authors.)</p> <p>22 When the simulation's carried out to age</p> <p>23 12 years, the magnitude of the explained</p> <p>24 increase is much less. By this age, the</p>
<p style="text-align: right;">Page 159</p> <p>1 And then highlight the</p> <p>2 bottom of 8, "simulation study by</p> <p>3 Wazana," all the way to the top of</p> <p>4 9.</p> <p>5 MS. BROWN: Okay. Hang on</p> <p>6 one second.</p> <p>7 Here is a hardcopy. And,</p> <p>8 again, if this is something you're</p> <p>9 not familiar with, take as long as</p> <p>10 you need to orient yourself to be</p> <p>11 able to answer the questions.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. "Simulation study by Wazana</p> <p>14 et al. suggests that an apparent increase</p> <p>15 of as much as 28-fold could be explained</p> <p>16 by a combination of three artifacts: a</p> <p>17 change in case definition, a decline in</p> <p>18 age of diagnosis, and better</p> <p>19 ascertainment. Several problems with</p> <p>20 this analysis detract from the</p> <p>21 validity" -- "from its validity and</p> <p>22 applicability. First, the data they use</p> <p>23 for the decline in mean age at diagnosis</p> <p>24 are based on noncomparable cohorts.</p>	<p style="text-align: right;">Page 161</p> <p>1 impact of age at diagnosis is largely</p> <p>2 eliminated, and the magnitude of</p> <p>3 artifactual increases that result from</p> <p>4 the other two assumptions (change in</p> <p>5 definition and more efficient) combine to</p> <p>6 a 2.4-fold increase. This prediction is</p> <p>7 much smaller than the actual increases in</p> <p>8 autism rates in the California DDS data,</p> <p>9 even if we assume, as Wazana et al. did,</p> <p>10 that all clinicians were using DSM-III in</p> <p>11 the earlier period (unlikely, given that</p> <p>12 the DSM-III-Revised had already been</p> <p>13 adopted) and all clinicians were using</p> <p>14 the DSM-IV at the end of our study</p> <p>15 period."</p> <p>16 Were you aware of this</p> <p>17 criticism of Wazana before you cited it?</p> <p>18 MS. BROWN: Objection to the</p> <p>19 form of the question.</p> <p>20 THE WITNESS: So Wazana is</p> <p>21 one reference among many that</p> <p>22 contributes to my opinions about</p> <p>23 the increasing prevalence of</p> <p>24 autism and is very commonly</p>

Page 162

1 accepted in the scientific
2 community.
3 The fact that there's
4 another paper that criticizes one
5 of the many papers that I cite
6 doesn't change my opinion.
7 MR. WATTS: Objection.
8 Nonresponsive.
9 BY MR. WATTS:
10 Q. Were you aware of this
11 criticism of Wazana when you cited it?
12 A. So you've already asked me
13 that question.
14 Q. You didn't answer it.
15 A. I did.
16 MS. BROWN: Well, let him
17 answer again.
18 THE WITNESS: You've asked
19 me if I have seen this paper.
20 BY MR. WATTS:
21 Q. Were you aware of it?
22 A. I -- I had not seen this
23 paper, no.
24 Q. Okay. Let's go to Volkmar.

Page 163

1 MS. BROWN: Were you done
2 with your answer, Doctor?
3 THE WITNESS: Only to
4 clarify that in order for me to be
5 thoughtful and careful about my
6 answer as it relates to this paper
7 and this criticism, I need to
8 spend time reviewing it because I
9 haven't seen it before.
10 BY MR. WATTS:
11 Q. Okay. Let's go to
12 Volkmar --
13 MS. BROWN: He's done
14 though, Mr. Watts. Let him
15 finish.
16 Was there anything else?
17 THE WITNESS: I'm done.
18 MS. BROWN: Okay.
19 BY MR. WATTS:
20 Q. Let's go to Volkmar. Is
21 that the next study that you cite in
22 Paragraph 43?
23 Exhibit 403, Paragraph 43.
24 MS. BROWN: I'll take this.

Page 164

1 Go to your report. We're back to
2 your report.
3 THE WITNESS: Yeah.
4 MS. BROWN: He wants to ask
5 you about another citation at
6 Paragraph 43.
7 Do you need it back?
8 MR. WATTS: I'll get it
9 back.
10 THE WITNESS: Yes.
11 BY MR. WATTS:
12 Q. So you cite Volkmar in 1988
13 as examining "a sample of 52 individuals
14 with autism diagnosed by clinical experts
15 and 62 individuals with developmental
16 disability with autism -- without autism
17 and applied criteria from two different
18 editions of DSM.
19 "Applying the DSM-III
20 criteria to this cohort correctly
21 diagnosed 42/52, or 81 percent, with
22 autism and incorrectly diagnosed 4/62, or
23 6.5, developmentally disabled individuals
24 as having autism"; is that right?

Page 165

1 A. Yes.
2 Q. All right. So the net
3 effect is 6 out of 62 were undercounted,
4 15 percent undercount, right?
5 A. The purpose of this study
6 was to show that by applying different
7 criteria, you can change the prevalence
8 and the autism diagnosis. And that's
9 what they did.
10 Q. What was my question?
11 Was the net effect that the
12 undercount was 15 percent, or 6 of 62?
13 A. In this small cohort, that
14 shows sort of a proof of concept, yes.
15 Q. What was the increase in ASD
16 prevalence between 1987 and 1994 when the
17 DSM-III-Revised was in place before
18 DSM-IV came out?
19 A. I'm not aware of exactly
20 what the increase was between those two
21 years.
22 Q. Did you provide any studies
23 showing the numerical impact of
24 DSM-III-Revised on subsequent prevalence

<p style="text-align: right;">Page 166</p> <p>1 rates?</p> <p>2 A. From DSM-III to DSM-III-R?</p> <p>3 In my report?</p> <p>4 Q. Yep.</p> <p>5 A. No. This -- this article</p> <p>6 and the idea behind this section of the</p> <p>7 report reflects the fact that when</p> <p>8 diagnostic criteria are broadened, more</p> <p>9 people are included in the diagnosis.</p> <p>10 That is inarguable.</p> <p>11 Q. Did you provide any studies</p> <p>12 showing the numerical impact of</p> <p>13 DSM-III-Revised on subsequent prevalence</p> <p>14 rates? Yes or no?</p> <p>15 MS. BROWN: Objection.</p> <p>16 Asked and answered.</p> <p>17 THE WITNESS: As I said, the</p> <p>18 premise here is that prevalence</p> <p>19 has increased. It's increased for</p> <p>20 a variety of reasons. Here is one</p> <p>21 example of a reason. Here is one</p> <p>22 study to support that.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. Did you provide any studies</p>	<p style="text-align: right;">Page 168</p> <p>1 specific issue.</p> <p>2 Q. Okay. Now, with respect to</p> <p>3 your statement on Page 19, Paragraph 44,</p> <p>4 you say, "It's noteworthy that the DSM</p> <p>5 criteria for autism spectrum disorder</p> <p>6 have continued to expand since autism</p> <p>7 first became a diagnostic entity in</p> <p>8 DSM-III in 1980."</p> <p>9 Do you see that, sir?</p> <p>10 A. Yes.</p> <p>11 Q. Are you suggesting that the</p> <p>12 rate of autism prevalence that we see in</p> <p>13 this country from 2013 to 2023 is a</p> <p>14 result of DSM-V diagnostic criteria</p> <p>15 replacing DSM-IV?</p> <p>16 A. I'm suggesting that there's</p> <p>17 a whole number of factors that contribute</p> <p>18 to the increase in prevalence and, among</p> <p>19 them, the change in criteria may</p> <p>20 contribute, yes.</p> <p>21 Q. What percentage of the</p> <p>22 increase in the rate of prevalence of ASD</p> <p>23 diagnosis do the studies show is</p> <p>24 attributable to DSM-V being utilized as</p>
<p style="text-align: right;">Page 167</p> <p>1 showing the numerical impact of</p> <p>2 DSM-III-Revised on subsequent prevalence</p> <p>3 rates?</p> <p>4 MS. BROWN: I object. He's</p> <p>5 answered it three times now. I'm</p> <p>6 looking at the answer.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. It's a yes-or-no.</p> <p>9 MS. BROWN: It is -- he</p> <p>10 already answered it. It's there.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. What studies did you provide</p> <p>13 showing the numerical impact of</p> <p>14 DSM-III-Revised?</p> <p>15 A. So the study that I am</p> <p>16 citing here shows the concept that when</p> <p>17 you change criteria, you can actually</p> <p>18 have an increase in prevalence, even</p> <p>19 within the same cohort.</p> <p>20 Q. What percentage of the</p> <p>21 increased prevalence between 1987 and</p> <p>22 1994 did scientific studies attribute to</p> <p>23 the revised criteria in DSM-III-Revised?</p> <p>24 A. I have not investigated that</p>	<p style="text-align: right;">Page 169</p> <p>1 opposed to DSM-IV?</p> <p>2 A. I have not investigated that</p> <p>3 specific issue.</p> <p>4 Q. Well, you cited to Tidmarsh,</p> <p>5 right?</p> <p>6 A. That's a citation, yes.</p> <p>7 Q. And Tidmarsh didn't try to</p> <p>8 quantify that increase of rate, right?</p> <p>9 A. Well, the Tidmarsh paper was</p> <p>10 written -- or was a chapter in 2003.</p> <p>11 Q. Okay. So that doesn't have</p> <p>12 anything to do with DSM-V replacing</p> <p>13 DSM-IV, agreed?</p> <p>14 A. Again, I think we're kind of</p> <p>15 missing the forest for the trees here,</p> <p>16 where diagnostic criteria have changed</p> <p>17 steadily since the autism was first</p> <p>18 described. That broadening of diagnostic</p> <p>19 criteria has led to an increase in</p> <p>20 prevalence, among many other factors.</p> <p>21 MR. WATTS: Objection.</p> <p>22 Nonresponsive.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. Tidmarsh didn't have</p>

Page 170

1 anything to do with explaining the
 2 increase in rate of prevalence of autism
 3 spectrum disorder since the publication
 4 of DSM-V in 2013, agreed?
 5 A. Tidmarsh was published in
 6 2003. So the answer is no, because the
 7 criteria would change in 2013.
 8 Q. Let go to LaSalle in 2023.
 9 Exhibit 511, please.
 10 (Document marked for
 11 identification as Exhibit
 12 Kolevzon 511.)
 13 BY MR. WATTS:
 14 Q. And as we look at the
 15 introduction, second sentence, "The
 16 prevalence of ASD has been steadily
 17 increasing over the past 20 years, from
 18 U.S. child estimates of 0.66 percent in
 19 2002, 1.13 percent in 2008, 1.85 in 2016,
 20 and 2.27 percent in 2018. Changes over
 21 this period in the rate of ASD is in part
 22 due to increased awareness and changing
 23 diagnoses. However, even estimates that
 24 account for diagnostic changes still

Page 171

1 leave an apparent increase that cannot
 2 likely be explained by genetics alone."
 3 Is that what it says?
 4 A. Those are the words on the
 5 page.
 6 Q. And at the bottom of that
 7 first paragraph, it says, "Together,
 8 these findings have demonstrated that ASD
 9 etiology is decidedly complex, involving
 10 hundreds of genes and interactions with
 11 environmental factors."
 12 Is that what it says?
 13 A. So, again, those are words
 14 on the page. This is a paper that I have
 15 not reviewed.
 16 But I need to clarify some
 17 points of this before I agree with it in
 18 totality.
 19 Q. Now, the DSM-V was published
 20 in May of 2013, right?
 21 A. I don't recall the exact
 22 month, but it was definitely 2013.
 23 Q. Okay. If your report says
 24 that, would you buy what you said?

Page 172

1 A. Yes.
 2 Q. Okay. Have you read any of
 3 the studies that have calculate the
 4 percentage of change of prevalence rates
 5 in autism spectrum disorder that had been
 6 attributed to DSM-V over DSM-IV?
 7 MS. BROWN: Objection.
 8 Lacks foundation.
 9 You can answer.
 10 THE WITNESS: So I've read
 11 some of the studies, but I don't
 12 have an immediate memory of them
 13 at this moment.
 14 BY MR. WATTS:
 15 Q. Let me take you through some
 16 of them. And I want to start with just a
 17 reference document. And this is
 18 Exhibit 481.
 19 (Document marked for
 20 identification as Exhibit
 21 Kolevzon 481.)
 22 BY MR. WATTS:
 23 Q. It's a young man named Toby
 24 Rogers, thesis in some school in

Page 173

1 Australia.
 2 And Page 19. I'm not going
 3 to ask you anything about the thesis,
 4 just what he's citing.
 5 MR. WATTS: Page 19, Erik.
 6 MS. BROWN: I'm going to
 7 object to this gentleman's thesis
 8 as lacking foundation.
 9 And just for the record, I
 10 have like a three-inch stack of
 11 printed dissertation here that I
 12 am aware that Dr. Kolevzon has
 13 never seen before.
 14 So lacks foundation. And to
 15 the extent you need time to at
 16 least flip through Mr. Toby
 17 Rogers' paper.
 18 BY MR. WATTS:
 19 Q. Go to Page 19. I'm not
 20 going to ask you about anything else.
 21 Here is my question:
 22 On Page 19 --
 23 MR. WATTS: Blow up Barton,
 24 Robins -- just that paragraph,

Page 174

1 Erik. Yep.

2 BY MR. WATTS:

3 Q. And he cites to Barton,

4 Robins, Brennan, and Fein in 2013, and

5 Mazefsky, McPartland, Gastgeb and Minshew

6 in 2013, who "concluded that the more

7 precise definition of autism in DSM-V

8 will result in fewer numbers of children

9 diagnosed with autism."

10 Do you see that?

11 A. I see the words that are

12 written on the page.

13 Q. Are you familiar with the

14 Barton paper in 2013 or the Mazefsky

15 paper in 2013?

16 A. I'm familiar with the

17 concerns at the time that the change in

18 diagnostic criteria would sort of lead to

19 people losing their diagnosis.

20 MR. WATTS: Objection --

21 THE WITNESS: I'm not

22 familiar with this specific paper.

23 Or if I've read it, I don't

24 recall.

Page 175

1 BY MR. WATTS:

2 Q. Okay. How about the Maenner

3 paper in 2014, have you read it?

4 A. Maenner is one of the main

5 authors on the CDC papers. So I don't

6 know this exact reference that they are

7 referring to. But I may or may not have

8 read it.

9 Q. And it says that the DSM-V

10 definition would lead to an 11.5 percent

11 decrease in the number of children

12 diagnosed with autism.

13 Did you know that?

14 A. You're reading from a person

15 I never heard of, for a dissertation that

16 is not peer-reviewed, and for a reference

17 that I had no knowledge of --

18 Q. Let's go to Maenner's

19 paper --

20 MS. BROWN: Wait. Let him

21 finish, though, please.

22 BY MR. WATTS:

23 Q. Let's go to Maenner's paper

24 that was peer-reviewed, Exhibit 433. I

Page 176

1 think that's --

2 (Document marked for

3 identification as Exhibit

4 Kolevzon 433.)

5 MS. BROWN: And for the

6 record, where did Tony Rogers'

7 [sic] dissertation come from? How

8 can we --

9 MR. WATTS: In Australia.

10 And I only used it for purposes of

11 pointing out two studies to see

12 whether he knew it was there. I'm

13 not going to ask any more --

14 MS. BROWN: I understand. I

15 just want, for the record, how

16 would one access this paper.

17 MR. WATTS: I can -- well,

18 Number 1, you've got it. And

19 Number 2, I'll show you how.

20 MS. BROWN: Okay. Let's

21 just add to the record, before we

22 close the deposition, a link, a

23 cite, something that would allow

24 someone in the public to access

Page 177

1 this.

2 MR. WATTS: Sure.

3 And I've already given you a

4 disc with the documents, so you'll

5 be able to see it there as well.

6 MS. BROWN: I know. It's

7 just we don't have time to review

8 the three inches of his

9 dissertation. So I want to know

10 how to access it.

11 MR. WATTS: So what you do

12 is you type in "Toby Rogers" or

13 the title and you turn on the

14 Google machine and it will come

15 up.

16 MS. BROWN: Okay. That's

17 what I wanted to know.

18 BY MR. WATTS:

19 Q. Okay. Now, enough of this.

20 Exhibit 433. Matthew

21 Maenner.

22 Have you read this -- have

23 you read this article before?

24 MS. BROWN: Hang on.

Page 178

1 BY MR. WATTS:
 2 Q. Have you ever seen it
 3 before?
 4 A. I recall this paper coming
 5 out. I don't remember the details of it.
 6 I'd have to review it if you wanted me to
 7 be --
 8 Q. So --
 9 MS. BROWN: Wait. Let him
 10 finish.
 11 BY MR. WATTS:
 12 Q. Maenner's article is
 13 entitled, "Potential Impact of DSM-V
 14 Criteria on Autism Spectrum Disorder
 15 Prevalence Estimates."
 16 Published in JAMA Psychiatry
 17 in March of 2014. And your testimony is
 18 you recall it coming out but you don't
 19 recall reading it, correct?
 20 A. No.
 21 MS. BROWN: Well --
 22 THE WITNESS: My testimony
 23 is that I recall it coming out,
 24 but I don't remember the details

Page 179

1 off the top of my head.
 2 BY MR. WATTS:
 3 Q. Okay. So --
 4 A. And I'll also say that
 5 Maenner is using methods from the
 6 CDC-monitoring sites, which is one of the
 7 methods that has contributed to
 8 increasing prevalence.
 9 Q. And Maenner, on Page 2 of
 10 20, in the results, "Based on these
 11 findings, ASD prevalence per 1,000 for
 12 2008 would have been 10.0 (95 percent
 13 confidence interval, 9.6 to 10.3) using
 14 DSM-V criteria compared with reported
 15 prevalence based on DSM-IV-TR criteria of
 16 11.0 to 11.7."
 17 Did I read that correctly?
 18 MS. BROWN: I object as
 19 lacking foundation.
 20 This is an article he said
 21 he's not familiar with.
 22 THE WITNESS: Yes. But --
 23 BY MR. WATTS:
 24 Q. Okay.

Page 180

1 A. Hold on. Hold on. I'm
 2 sorry.
 3 We have to go, just for
 4 clarification, to the methods. All
 5 right. So the methods used for this
 6 study were based on coded behaviors
 7 documented in children's medical records
 8 and educational evaluations. These are
 9 not proxies for the diagnosis. This is
 10 the problem with the CDC methods overall.
 11 And so the fact that Dr. Maenner has now
 12 taken the CDC methods and applied it to
 13 the DSM-III -- DSM-IV and the DSM-V
 14 doesn't mean that I necessarily would
 15 agree with these results.
 16 Q. Did you put this in your
 17 materials considered?
 18 A. Did I put what in my
 19 materials considered?
 20 Q. The Maenner paper.
 21 A. This particular paper? I
 22 don't know if I did or not.
 23 Q. Okay. Let's go to the
 24 Sturmey paper of 2013, Exhibit 437.

Page 181

1 (Document marked for
 2 identification as Exhibit
 3 Kolevzon 437.)
 4 BY MR. WATTS:
 5 Q. The abstract --
 6 MS. BROWN: Hang on. Let's
 7 just give him a second to get the
 8 copy so he can answer the
 9 question.
 10 MR. WATTS: Pull up the
 11 abstract.
 12 BY MR. WATTS:
 13 Q. "Systematic review of
 14 empirical papers comparing the
 15 application of DSM-IV and DSM-V
 16 diagnostic criteria for Autism Spectrum
 17 Disorders identified 12 papers. The
 18 application of DSM-V diagnostic criteria
 19 resulted in approximately a one-third
 20 reduction in Autism Spectrum Disorders."
 21 Did I read that correctly?
 22 A. Those are the words on the
 23 page, yes.
 24 Q. Did you cite to any of those

Page 182

1 12 papers saying that DSM-V resulted in a
 2 contraction of the number of autism
 3 spectrum disorders being reported?
 4 A. I don't know whether those
 5 papers are cited in my reference list or
 6 not.
 7 Q. Okay. In terms of the
 8 quantum of that subtraction -- go to Page
 9 251.
 10 "In reviewing those
 11 12 papers, the median overall change in
 12 diagnosis of ASD from all papers was
 13 negative 36.97 percent."
 14 Do you see that, sir?
 15 A. I see what they've said on
 16 the paper.
 17 Q. Now --
 18 A. This is not in -- not
 19 consistent with the way that it's viewed
 20 in the community. It's not consistent
 21 with my experience as a clinician.
 22 The idea that we're debating
 23 whether or not change in diagnostic
 24 criteria have led to an increase in

Page 183

1 prevalence to me is misguided.
 2 MR. WATTS: Doctor,
 3 nonresponsive.
 4 MS. BROWN: Object.
 5 BY MR. WATTS:
 6 Q. My question is, did you ever
 7 see Sturmey's paper before I just showed
 8 it to you?
 9 A. I don't recall whether I
 10 have or haven't.
 11 Q. Let's go to Zander's paper
 12 in 2015, Exhibit 443.
 13 (Document marked for
 14 identification as Exhibit
 15 Kolevzon 443.)
 16 BY MR. WATTS:
 17 Q. A "New DSM-V Impairment
 18 Criterion: A Challenge to Early Autism
 19 Spectrum Disorder Diagnosis?" by Eric
 20 Zander, published online in June 28,
 21 2015.
 22 Did you cite this in your
 23 materials considered?
 24 A. I don't know if I did or

Page 184

1 didn't.
 2 Q. On the second page -- I'm
 3 sorry, on Page 3640.
 4 MS. BROWN: Let's give him a
 5 minute to familiarize himself with
 6 the paper.
 7 BY MR. WATTS:
 8 Q. Well, as we're familiarizing
 9 ourself.
 10 MR. WATTS: Let's go back to
 11 3636. I want to set the stage.
 12 MS. BROWN: I'm just going
 13 to object. The hardcopy is
 14 missing pages, and to the extent
 15 that he's not familiar with it, we
 16 need to get him a copy that he can
 17 read to answer your questions.
 18 MR. WATTS: 3636.
 19 THE WITNESS: I'm sorry, I'm
 20 still on this paper.
 21 MS. BROWN: Take your time.
 22 Take you time.
 23 This -- my copy was missing
 24 pages. If you want a complete

Page 185

1 one, you might want to look at
 2 this.
 3 MR. WATTS: Erik, did you
 4 pre-highlight this stuff?
 5 TRIAL TECH: Yes.
 6 MR. WATTS: Can you push
 7 click so the highlighting comes up
 8 so we can figure it out?
 9 TRIAL TECH: On Page 3636?
 10 MR. WATTS: Yeah.
 11 BY MR. WATTS:
 12 Q. "The objective of the
 13 current study was to investigate the
 14 impact of the new DSM-V impairment
 15 criterion on diagnosing ASD in toddlers
 16 and young preschoolers."
 17 A. It looks like -- and I'm
 18 just seeing this for the first time.
 19 It's focused on the impairment criterion
 20 using an adaptive behavior scale.
 21 Q. Now, when you say you're
 22 seeing it for the first time, you hadn't
 23 seen it before I just showed it to you?
 24 A. I don't recall seeing this

Page 186

1 before.

2 Q. Okay. If we go to 3641.

3 The conclusion after that objective was

4 set says, "Our findings indicate that a

5 strict application of this DSM-V

6 criterion would compromise the

7 possibility for very young children to

8 get an ASD diagnosis despite exhibiting

9 the defining symptomatology."

10 Do you see that, sir?

11 MS. BROWN: I object to

12 lacking foundation. He said he

13 hasn't seen the article before.

14 BY MR. WATTS:

15 Q. You hadn't seen it, had you?

16 MS. BROWN: Well, he asked

17 for a minute to read --

18 THE WITNESS: You asked me

19 two different questions.

20 MS. BROWN: -- and

21 familiarize himself with the

22 article.

23 THE WITNESS: You asked me

24 two questions. One, do I see the

Page 187

1 words on the page? The answer's

2 yes.

3 Two, if I see -- I don't

4 recall seeing this paper.

5 BY MR. WATTS:

6 Q. Let's go to Bennett, 2016,

7 Exhibit 447.

8 (Document marked for

9 identification as Exhibit

10 Kolevzon 447.)

11 BY MR. WATTS:

12 Q. "A Meta-Analysis of DSM-V

13 Autism Diagnoses in Relation to DSM-IV

14 and DSM-IV-TR?"

15 Published in the Review

16 Journal of Autism and Developmental

17 Disorders in 2016. The author is Matthew

18 Bennett.

19 MS. BROWN: And, again,

20 Doctor, if you haven't seen this

21 before, take as long as you need

22 to familiarize yourself with it.

23 BY MR. WATTS:

24 Q. Page 2, it says, "All 24

Page 188

1 studies identified indicated a reduction

2 in the number of people with a DSM-IV or

3 DSM-IV-TR ASD diagnosis being eligible

4 for a DSM-V ASD diagnosis" -- and "a 35

5 and 37 percent reduction respectfully."

6 MS. BROWN: And I object as

7 lacking foundation.

8 Mr. Watts, what we're doing

9 is just reading random sentences

10 in articles that he's testified he

11 would like a minute to review and

12 he has not seen before. So I

13 object --

14 MR. WATTS: Well, that's my

15 question, have you see it before.

16 MS. BROWN: Wait. Let me

17 just put this on the record.

18 MR. WATTS: And, Alli, your

19 job is to say "Objection to form."

20 MS. BROWN: I understand.

21 But what you're doing is not fair.

22 MR. WATTS: I know, but when

23 you're giving speeches, you're

24 coaching the witness.

Page 189

1 MS. BROWN: Well, first of

2 all, that's not -- that's not

3 fair.

4 MR. WATTS: You can't give a

5 speech every time. You can say,

6 "Objection. Form."

7 MS. BROWN: I need to

8 preserve an objection to this

9 line --

10 MR. WATTS: Have you read

11 the deposition protocol order?

12 MS. BROWN: I have.

13 MR. WATTS: Okay. So --

14 MS. BROWN: And I am

15 absolutely complying it --

16 complying with it.

17 MR. WATTS: Okay.

18 MS. BROWN: But what doesn't

19 comply with it is when a witness

20 asks for time to look at something

21 and you continue to just read

22 random sentences.

23 I object to that. And it

24 lacks foundation. And it's

Page 190

1 improper.

2 BY MR. WATTS:

3 Q. Doctor, have you ever seen

4 this paper before?

5 A. I can't say whether I have

6 or I haven't.

7 MR. WATTS: Go to Baio,

8 2018, Exhibit 475.

9 (Document marked for

10 identification as Exhibit

11 Kolevzon 475.)

12 MS. BROWN: Please finish

13 your answer.

14 Did you have something you

15 were answering?

16 THE WITNESS: I feel like

17 it's important to understand all

18 of these papers in their context,

19 right.

20 When the DSM-V came out

21 there were concerns that people

22 would lose their diagnosis, and so

23 lots of papers came out on both

24 sides of this issue, some showing

Page 191

1 they wouldn't, some showing that

2 they would, and it was a very kind

3 of heightened time.

4 Since then, it's clear that

5 prevalence rates have increased,

6 and it's clear that many, many,

7 many factors have contributed,

8 including the broadening

9 diagnostic criteria.

10 BY MR. WATTS:

11 Q. You done?

12 A. Yes.

13 MR. WATTS: Objection.

14 Nonresponsive.

15 MS. BROWN: Objection.

16 BY MR. WATTS:

17 Q. Go to Exhibit 475.

18 Have you seen the Baio

19 paper, published by the Centers for

20 Disease Control and Prevention in 2018?

21 MS. BROWN: Give us a minute

22 to just get the hardcopy in front

23 of him. Take a minute.

24 BY MR. WATTS:

Page 192

1 Q. Doctor, my only question is,

2 have you seen this before?

3 A. Yes.

4 Q. Okay. Let's go to Cartolano

5 in 2018, Exhibit 476.

6 (Document marked for

7 identification as Exhibit

8 Kolevzon 476.)

9 MS. BROWN: One second.

10 BY MR. WATTS:

11 Q. And in fairness to you, I'm

12 sure, I won't blame you if you haven't

13 seen this one. It looks like it's some

14 sort of a graduate student study.

15 "Under the Umbrella:

16 Redefining the Spectrum of Autism."

17 Without being critical, have

18 you ever seen this before?

19 A. Definitely not.

20 Q. Okay. Let's keep going.

21 You know who Dr. Fombonne

22 is?

23 A. Yes.

24 Q. Exhibit 477.

Page 193

1 (Document marked for

2 identification as Exhibit

3 Kolevzon 477.)

4 BY MR. WATTS:

5 Q. You cited this paper in your

6 reliance materials at Footnote 25.

7 And the question I have is

8 on Page 9 of 13, Footnote 1, where

9 Dr. Fombonne --

10 A. Hold on.

11 MS. BROWN: Just one second,

12 please.

13 BY MR. WATTS:

14 Q. Page 9 of 13.

15 A. Just give me a second.

16 Q. Yeah.

17 In Footnote 1 it says,

18 "Calculated by the author from Baio et

19 al. (2018), Page 12."

20 Then it says, The DSM-IV-TR

21 prevalence in the same subsample was

22 1.77 percent (4,236 plus 4,222 over 20 --

23 263,775). The DSM prevalence is reduced

24 by 18.1 percent compared to that of the

<p style="text-align: right;">Page 194</p> <p>1 DSM-IV-TR.</p> <p>2 Have you ever talked to</p> <p>3 Dr. Fombonne about his calculation about</p> <p>4 the reduction in prevalence under DSM-V</p> <p>5 versus DSM-IV?</p> <p>6 MS. BROWN: Objection.</p> <p>7 Lacks foundation.</p> <p>8 THE WITNESS: I've talked to</p> <p>9 Dr. Fombonne about the rise in</p> <p>10 prevalence of autism, but not</p> <p>11 about this specific calculation.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Okay. Let's go to</p> <p>14 Exhibit 490.</p> <p>15 (Document marked for</p> <p>16 identification as Exhibit</p> <p>17 Kolevzon 490.)</p> <p>18 MR. WATTS: Kalra in 2021.</p> <p>19 MS. BROWN: What's the</p> <p>20 number? 490?</p> <p>21 BY MR. WATTS:</p> <p>22 Q. "Comparison of diagnostic</p> <p>23 criteria for autism spectrum disorder</p> <p>24 (ASD) using Diagnostic and Statistical</p>	<p style="text-align: right;">Page 196</p> <p>1 BY MR. WATTS:</p> <p>2 Q. I assume you have seen this.</p> <p>3 MS. BROWN: Take a minute to</p> <p>4 answer.</p> <p>5 THE WITNESS: This exhibit</p> <p>6 is a?</p> <p>7 BY MR. WATTS:</p> <p>8 Q. Press release.</p> <p>9 A. Press release from the CDC.</p> <p>10 Q. Okay. And --</p> <p>11 MS. BROWN: Let's just give</p> <p>12 him a minute to read it.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. It says, under "Main</p> <p>15 findings," "The findings suggested that</p> <p>16 estimates of the number of children with</p> <p>17 ASD might be lower using the current</p> <p>18 DSM-V criteria than using the previous</p> <p>19 DSM-IV-TR criteria."</p> <p>20 Do you see that, sir?</p> <p>21 MS. BROWN: Object as</p> <p>22 lacking foundation.</p> <p>23 If you need a minute to look</p> <p>24 at this and understand what this</p>
<p style="text-align: right;">Page 195</p> <p>1 Manual (DSM) and International</p> <p>2 Classification of Diseases (ICD)."</p> <p>3 In fairness, this is a study</p> <p>4 in Northern India. Have you ever seen</p> <p>5 this?</p> <p>6 A. I don't recall if I have or</p> <p>7 not.</p> <p>8 Q. Okay.</p> <p>9 MS. BROWN: Well, if you</p> <p>10 have not -- I mean, he should</p> <p>11 probably take a minute to check if</p> <p>12 you want a truthful answer.</p> <p>13 MR. WATTS: I'm happy with</p> <p>14 the answer he gave, because I</p> <p>15 wouldn't expect anybody to see it</p> <p>16 anyway.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. We'll go to one he should</p> <p>19 have seen.</p> <p>20 Exhibit 498, the CDC, in</p> <p>21 2022.</p> <p>22 (Document marked for</p> <p>23 identification as Exhibit</p> <p>24 Kolevzon 498.)</p>	<p style="text-align: right;">Page 197</p> <p>1 press release is about, please</p> <p>2 take it.</p> <p>3 THE WITNESS: So I see the</p> <p>4 words on the page, but I don't</p> <p>5 know on what basis they are making</p> <p>6 this conclusion, and I don't know</p> <p>7 what study they are relying on.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. Did you cite to this press</p> <p>10 release?</p> <p>11 A. I don't know if I cited to</p> <p>12 this press release or not.</p> <p>13 Q. Have you ever seen that the</p> <p>14 CDC says that the number of children with</p> <p>15 ASD might be lower using the current</p> <p>16 DSM-V criteria rather than using the</p> <p>17 DSM-IV-TR criteria?</p> <p>18 MS. BROWN: I object. That</p> <p>19 misstates this document and the</p> <p>20 CDC's position.</p> <p>21 THE WITNESS: I don't know</p> <p>22 what this reference refers to</p> <p>23 specifically in terms of studies.</p> <p>24 I know that the CDC methods</p>

Page 198

1 of calculating prevalence of
2 autism are fundamentally flawed.
3 BY MR. WATTS:
4 Q. Have you called the CDC and
5 told them that?
6 A. No.
7 Q. Have you written to Congress
8 telling them that their money is being
9 spent on a fundamentally flawed
10 calculation at the CDC?
11 MS. BROWN: I object. I
12 object. That lacks foundation --
13 THE WITNESS: I don't see
14 that as my role.
15 BY MR. WATTS:
16 Q. Have you published a single
17 article stating that the CDC prevalence
18 calculation methodology is mistaken?
19 MS. BROWN: Objection to the
20 form of the question.
21 THE WITNESS: So the
22 scientific community that examines
23 these issues has raised concerns
24 about the methods, about how these

Page 199

1 methods are contributing to
2 estimates that are overblown.
3 MR. WATTS: Objection.
4 Nonresponsive.
5 MS. BROWN: Object.
6 BY MR. WATTS:
7 Q. Has Alexander Kolevzon
8 published a single word saying that the
9 CDC calculations of autism spectrum
10 disorder prevalence rates is in error?
11 MS. BROWN: Objection.
12 Lacks foundation.
13 THE WITNESS: You need to be
14 specific about when you say
15 about -- when you say published.
16 BY MR. WATTS:
17 Q. Like written an article
18 telling the scientific community the CDC
19 has got it all wrong.
20 MS. BROWN: Objection.
21 BY MR. WATTS:
22 Q. Have you done that?
23 A. I have definitely spoke
24 about my concerns with the methods, both

Page 200

1 professionally and in my teaching. And
2 my view is consistent with the general
3 view.
4 And, by the way, it's just
5 factually correct. You cannot make the
6 diagnosis of autism based purely on
7 school records and symptoms that appear
8 in school records that are consistent
9 with the criteria.
10 MR. WATTS: Objection.
11 Nonresponsive.
12 MS. BROWN: Object.
13 BY MR. WATTS:
14 Q. Have you published anything
15 saying the CDC calculation rate is in
16 error?
17 MS. BROWN: Objection.
18 Asked and answered.
19 You can answer again,
20 Dr. Kolevzon.
21 THE WITNESS: As I said,
22 when I teach, when I speak to
23 professionals, when I give
24 presentations, and this issue

Page 201

1 comes up, I'm certainly most vocal
2 about it.
3 BY MR. WATTS:
4 Q. Is there a reported
5 publication?
6 A. Is there a peer-reviewed
7 reported publication?
8 Q. Yes, sir.
9 A. I don't recall.
10 Q. Okay. Let's go to the
11 younger age of diagnosis.
12 Now, you reference that in
13 2007 the American Academy of Pediatrics
14 published a policy recommending
15 ASD-specific screening at 18 to
16 24 months, right?
17 A. Yes.
18 Q. And to the extent that that
19 caused a bump in prevalence rate, would
20 you give me that that's a onetime bump?
21 MS. BROWN: Objection to the
22 form.
23 THE WITNESS: No.
24 BY MR. WATTS:

Page 202

1 Q. Okay. So from the
2 standpoint of what happened in 2007, they
3 recommended screening at 18 months,
4 right?
5 A. 18 and 24 months.
6 Q. Yes.
7 And has there been any
8 change in the date of the recommendation
9 for screening in the last 16 years since
10 2007?
11 A. I'm not sure I understand
12 the question.
13 Q. Sure.
14 Has it changed, since that
15 2007 recommendation, to start diagnosing
16 between 18 and 24 months?
17 MS. BROWN: Objection.
18 Vague.
19 You can answer if you
20 understand.
21 THE WITNESS: Has the
22 recommendation to screen for
23 autism at 18 to 24 months changed
24 since 2007?

Page 203

1 BY MR. WATTS:
2 Q. Yeah. They haven't brought
3 it down to six to eight months, is my
4 point.
5 A. No.
6 Q. Okay.
7 A. But the compliance with that
8 recommendation has increased steadily.
9 Q. Now, you cite in support of
10 this argument to a paper called Sheldrick
11 on Page 20, Footnote 35.
12 And you say that Sheldrick
13 shows "that ASD screening and early
14 intervention of less than 3 years old is
15 associated with a 60 percent increase in
16 ASD diagnosis"; is that right?
17 A. I'd have to pull up this
18 paper to look at it more carefully. But
19 that's what I've written on the page,
20 yes.
21 Q. Now, you realize Sheldrick
22 was simply saying we needed to go into
23 communities of color that are not being
24 screened and start screening, right?

Page 204

1 MS. BROWN: Objection.
2 Lacks foundation.
3 THE WITNESS: The point is
4 that if you don't screen, you
5 don't detect cases; and when you
6 do screen, you do detect cases.
7 BY MR. WATTS:
8 Q. Okay.
9 A. And so when screening became
10 mandated, more cases were detected.
11 Q. Okay. And in Sheldrick they
12 said, look, the services failed to
13 provide ASD screening to Spanish-speaking
14 families, and so we need to screen for
15 Spanish-speaking families, right?
16 MS. BROWN: If we want to
17 talk about this paper, can we pull
18 it up.
19 MR. WATTS: No.
20 BY MR. WATTS:
21 Q. Is that what happened? You
22 cited it, you should know it.
23 MS. BROWN: Well, how's he
24 going to know all these papers --

Page 205

1 MR. WATTS: "Objection.
2 Form," Alli. Cut it out.
3 MS. BROWN: I object to the
4 form. I object to the form.
5 But let's be fair with him.
6 You want a truthful answer --
7 BY MR. WATTS:
8 Q. Is that -- do you know what
9 Sheldrick did or not?
10 A. As I understand it, this is
11 not an exercise in my memory. I did
12 review this paper carefully, and I'm
13 happy to go back and review it again.
14 Q. Do you know that it had to
15 do with going into communities with
16 Spanish-speaking-only parents?
17 A. Again, I'm happy to review
18 the methods again right now.
19 Q. Now, let me take you back to
20 Exhibit 417, which is the Hertz-Picciotto
21 "Rise in Autism, Role of Age At
22 Diagnosis." This is the one you told me
23 you hadn't seen, right?
24 A. I have not seen this paper.

Page 206

1 Q. Have you looked at any of
 2 Dr. Hertz-Picciotto's work with respect
 3 to the rise in autism prevalence in
 4 California?
 5 A. I'm sure I have. I don't
 6 recall exactly what all the findings were
 7 at this moment.
 8 Q. And you realize that she
 9 says, is the changing age of diagnosis
 10 can only explain a 12 percent increase?
 11 A. I don't know what
 12 Dr. Hertz-Picciotto says or doesn't say
 13 specifically.
 14 Q. Go to Page 3 of 20. Let's
 15 just pull it out there.
 16 MS. BROWN: Hang on. Let's
 17 just get the hardcopy in front of
 18 him.
 19 This is something we've
 20 already marked?
 21 THE WITNESS: This is the
 22 one that -- this is not the full
 23 version of it, though.
 24 MS. BROWN: I think this is

Page 207

1 it, right?
 2 So, Counsel, this is the one
 3 that I think we had borrowed your
 4 copy for because we only had the
 5 abstract. And we need to borrow
 6 it back, please.
 7 MR. WATTS: I'm giving it
 8 back to you.
 9 MS. BROWN: Thank you.
 10 BY MR. WATTS:
 11 Q. The last sentence of the
 12 results on Page 3 of 20 says, "Changing
 13 age of diagnosis can explain a 12 percent
 14 increase," right?
 15 MS. BROWN: Hang on. Object
 16 as lacking foundation.
 17 Let's let him get to the
 18 hardcopy and review what he needs
 19 to, to answer your question.
 20 BY MR. WATTS:
 21 Q. Right there.
 22 A. That's what it says, yes.
 23 Q. Now, if changing age at
 24 diagnosis explains a 12 percent increase,

Page 208

1 and there's a 685 percent increase, that
 2 means that of the increase, only
 3 1.75 percent of it is explained by
 4 changing age of diagnosis, doesn't it?
 5 MS. BROWN: Objection.
 6 Assumes facts. Lacks foundation.
 7 THE WITNESS: So the
 8 conclusion that's written here is
 9 that the changing age at diagnosis
 10 can explain a 12 percent increase,
 11 and part of that includes also
 12 milder cases.
 13 BY MR. WATTS:
 14 Q. So that's 56 percent. So
 15 you add those together and that's
 16 68 percent, but we had 685 percent
 17 increase.
 18 A. So there are many, many
 19 factors that contribute to the increase
 20 in prevalence.
 21 The most likely of which and
 22 the most, kind of, profound of which is
 23 misidentification of cases.
 24 Q. Doctor, you listed five

Page 209

1 factors, so I'm asking about them, and
 2 the changing age of diagnosis, which is
 3 Category C, the one study that I've been
 4 able to pull up says it increases it by
 5 12 out of 685 percent.
 6 Do you have another study
 7 you can point me to?
 8 MS. BROWN: Objection to the
 9 form of the question.
 10 THE WITNESS: So at this
 11 moment, off the top of my head, I
 12 do not.
 13 But when you take a swath of
 14 people at a certain age, like
 15 eight, and you look for people
 16 that have been diagnosed with
 17 autism, if they were previously
 18 diagnosed at six or seven and now
 19 they are being diagnosed at two or
 20 three, you are going to include
 21 more people in your study.
 22 BY MR. WATTS:
 23 Q. Sure. But they are not
 24 going to be rediagnosed when they turn

Page 210

1 six or seven, right?

2 A. No, they would -- they would

3 count as a case.

4 Q. So when I said it was a

5 onetime phenomenon, that's what I meant.

6 They are counted. They are

7 in the system. They are not counted

8 again when they turn six or seven again,

9 right?

10 A. Culturally, what this

11 mandate did was it sensitized

12 pediatricians across the country to the

13 importance of screening for autism, and

14 so whether they did it properly at 18 to

15 24, or they were desensitized to it and

16 did it at six or seven, the average age

17 of diagnosis went down. It just did.

18 Q. Doctor, and it explained a

19 12 percent increase, but we've got a

20 700 percent increase.

21 A. The point being --

22 Q. Do you have another study

23 that says the changing age of diagnosis

24 had a statistically more impactful result

Page 211

1 in explaining the overall increase of

2 prevalence?

3 MS. BROWN: Objection.

4 Compound. Misstates the study.

5 Misstates the evidence.

6 BY MR. WATTS:

7 Q. Do you have a single other

8 study?

9 A. You're pointing to a single

10 study.

11 Q. Do you have one?

12 A. I don't have one off the top

13 of my head right now.

14 Q. Okay. Let's go to the

15 changes in law in 1991.

16 And I want to go to your

17 report, Exhibit 403. Page 20,

18 paragraph 46, please.

19 All right. Now,

20 Paragraph 46 and 47, you reference

21 something that happened in 1991 called

22 the Individuals with Disability Education

23 Act?

24 A. And it continues to be

Page 212

1 relevant today.

2 Q. And you cite Croen in 2002;

3 is that right?

4 A. That's one of the references

5 that supports that, yes.

6 Q. Well, help me with any other

7 reference that supports that, that you

8 bothered to cite in this -- this report?

9 MS. BROWN: Did you say that

10 you bothered to say?

11 MR. WATTS: I did.

12 MS. BROWN: I object.

13 That's argumentative.

14 BY MR. WATTS:

15 Q. Okay. So there's other

16 ones, but you didn't give them to me, so

17 let's talk about the one you did give.

18 And that's Croen, right?

19 A. Yeah. And I can also rely

20 on my 20 years of experience in seeing

21 thousands and thousands of kids being

22 misdiagnosed for the purposes of

23 educational services.

24 Q. Doctor, did you give me a

Page 213

1 single other citation other than Croen in

2 2002?

3 MS. BROWN: Objection to the

4 form of the question. Misstates

5 the report.

6 THE WITNESS: As one

7 reference to support this idea

8 that's commonly accepted in the

9 scientific community as truthful,

10 I've cited one reference.

11 BY MR. WATTS:

12 Q. It's the only reference you

13 gave me, right?

14 MS. BROWN: Objection.

15 THE WITNESS: In addition to

16 my 20 years of experience.

17 BY MR. WATTS:

18 Q. And so let's split this up.

19 Did I only get one

20 reference, Croen of 2002, yes or no?

21 A. I provided one reference to

22 support this statement.

23 Q. Okay. And you say that

24 reference is so excellent, it's commonly

<p style="text-align: right;">Page 214</p> <p>1 accepted as proving your point, right?</p> <p>2 A. That mischaracterizes what I</p> <p>3 said.</p> <p>4 What I said is that it's</p> <p>5 commonly accepted in the scientific</p> <p>6 community, based on decades of clinical</p> <p>7 experience, that when this law changed,</p> <p>8 families decided they wanted services and</p> <p>9 they got the -- the autism diagnosis in</p> <p>10 order to get services; it became</p> <p>11 prescriptive.</p> <p>12 Q. And as your silver bullet,</p> <p>13 you give me crown -- Croen of 2002.</p> <p>14 That's it?</p> <p>15 A. It's not a --</p> <p>16 MS. BROWN: Objection.</p> <p>17 Argumentive.</p> <p>18 Go ahead.</p> <p>19 THE WITNESS: It's not a</p> <p>20 silver bullet. It is a reference</p> <p>21 that supports the idea.</p> <p>22 BY MR. WATTS:</p> <p>23 Q. Do you have a single other</p> <p>24 reference you want to share with this</p>	<p style="text-align: right;">Page 216</p> <p>1 Footnote 36.</p> <p>2 MS. BROWN: Yep. Mm-hmm.</p> <p>3 And Dr. Kolevzon needs a</p> <p>4 break as soon as your question is</p> <p>5 not pending anymore.</p> <p>6 MR. WATTS: As soon as we</p> <p>7 get done with Croen, we'll take a</p> <p>8 break. Okay?</p> <p>9 MS. BROWN: Good.</p> <p>10 BY MR. WATTS:</p> <p>11 Q. All right. You see how in</p> <p>12 Footnote 36 you cite to Croen,</p> <p>13 "Descriptive epidemiology of autism in a</p> <p>14 California population: Who is at risk?"</p> <p>15 Is that right?</p> <p>16 A. That looks to be the Croen</p> <p>17 reference, yes.</p> <p>18 Q. Okay. And then your only</p> <p>19 other reference is -- go to 37 and 38 --</p> <p>20 is Id. at 214; is that right?</p> <p>21 MR. WATTS: Show -- show 36,</p> <p>22 37 and 38.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. So you've given three</p>
<p style="text-align: right;">Page 215</p> <p>1 jury other than Croen 2002?</p> <p>2 MS. BROWN: Objection.</p> <p>3 Other than what he already</p> <p>4 testified to.</p> <p>5 THE WITNESS: I think I --</p> <p>6 as I've said, at this time,</p> <p>7 sitting here today, I do not have</p> <p>8 another reference. That isn't to</p> <p>9 say that another reference doesn't</p> <p>10 exist.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Now let's visit about Croen</p> <p>13 in 2002.</p> <p>14 MS. BROWN: Were you done?</p> <p>15 THE WITNESS: Sure.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. Croen in 2002, you dropped</p> <p>18 Footnote 36.</p> <p>19 MR. WATTS: Can we show --</p> <p>20 just pull up 47 and go down to the</p> <p>21 footnote so we can see it.</p> <p>22 No. No. Take that off.</p> <p>23 Okay. I want only</p> <p>24 Paragraph 47, and I want to see</p>	<p style="text-align: right;">Page 217</p> <p>1 footnotes, 36, 37, and 38.</p> <p>2 Id. means same paper, right?</p> <p>3 A. Yeah.</p> <p>4 Q. Now, I'm curious,</p> <p>5 Footnote 36 has a paper range of 217 to</p> <p>6 224, and your Id. is the 214, which is</p> <p>7 outside that range.</p> <p>8 That's a mistake, isn't it?</p> <p>9 A. Go back. Sorry.</p> <p>10 Q. Do you see 36?</p> <p>11 A. Yep.</p> <p>12 Q. And the paper range is 217</p> <p>13 to 224, right?</p> <p>14 A. Yes.</p> <p>15 Q. So it can't be an Id. at</p> <p>16 214. It's got to be something went wrong</p> <p>17 here, right?</p> <p>18 A. Most likely.</p> <p>19 Q. Okay. Now, let's talk about</p> <p>20 what went wrong.</p> <p>21 MS. BROWN: Can we give</p> <p>22 Dr. Kolevzon a bathroom break</p> <p>23 first, though?</p> <p>24 MR. WATTS: Sure.</p>

Page 218

1 MS. BROWN: Okay. Perfect.

2 THE VIDEOGRAPHER: The time

3 right now is 11:02 a.m. We are

4 off the record.

5 (Short break.)

6 THE VIDEOGRAPHER: The time

7 right now is 11:10 a.m. We're

8 back on the record.

9 BY MR. WATTS:

10 Q. Okay. Doctor, we've got

11 Footnote 36 which cites to "Descriptive

12 epidemiology in a California population:

13 Who is at risk?"

14 Journal of Autism and

15 Developmental Disorders, 2002, Volume 32,

16 Pages 217 to 24.

17 We clearly have a typo in

18 Footnote 37 and 38, because it doesn't

19 fit within the range.

20 But let's go to the paper,

21 which is Exhibit 408, "Descriptive

22 Epidemiology."

23 (Document marked for

24 identification as Exhibit

Page 219

1 Kolevzon 408.)

2 BY MR. WATTS:

3 Q. This is the paper that you

4 cite to in Footnote 36, right?

5 MS. BROWN: Hold on.

6 Okay. Got it.

7 BY MR. WATTS:

8 Q. Is that right, Doctor?

9 A. Yeah. They seem consistent.

10 Q. Yeah. And I'm going to

11 clean it up here in a second.

12 Go to Page 219, because

13 there's one thing in this paper that I

14 want you to see.

15 It says, "Our series of

16 children with autism is larger than the

17 total number of children included in all

18 previous epidemiologic studies of autism

19 combined."

20 Do you see that?

21 A. I see where it says that,

22 yeah.

23 Q. Okay. Now, I think what

24 happened, and not being pejorative about

Page 220

1 it, is you cited originally to this, and

2 you meant to cite to another one, which

3 I'm going to take you to, which is 409.

4 So let's just clean this up,

5 if we could.

6 (Document marked for

7 identification as Exhibit

8 Kolevzon 409.)

9 BY MR. WATTS:

10 Q. 409, in fairness to you, is

11 in the same journal. It's entitled, "The

12 Changing Prevalence in Autism in

13 California," and it starts on Page 207

14 and includes Page 214.

15 Do you see that?

16 A. Yeah. In looking at my --

17 yeah, in looking at my description of the

18 paper, the 36 reference is wrong, and it

19 should be to this.

20 Q. Right. Okay. So when you

21 cited to 408, you meant to cite to 409.

22 That's where we are, right?

23 A. Yes.

24 Q. Okay. Now let's go to 409.

Page 221

1 That's what I thought. And

2 these things happen. It's not a big

3 deal.

4 A. Yeah.

5 Q. But let's go to 409.

6 Okay. On Page 213 --

7 A. Just let me orient myself

8 one second.

9 Q. In the second column, it

10 says, "The marked increase in the

11 prevalence of autism and MR observed for

12 children born in 1990-1992 provides

13 support for the hypothesis that

14 improvements in detection may have

15 contributed to our results."

16 And then go to the next one.

17 "Changes in diagnostic

18 practices during the study period might

19 also have contributed to the observed

20 increase."

21 That's what you meant to

22 cite to, right?

23 A. Yes.

24 Q. Okay. Now, this is the one

<p style="text-align: right;">Page 222</p> <p>1 study, Exhibit 409, that you cited to, by 2 intention anyway, to support your 3 argument in this particular point dealing 4 with the change of special education law, 5 right, Croen in 2002? 6 A. So it's very clear that the 7 change in special education law led to a 8 shift in diagnostic practices, and this 9 study provides some evidence that, in 10 fact, that's true. 11 Q. It's the one study you 12 provided to support it, right? 13 MS. BROWN: Objection. 14 Misstates testimony. 15 THE WITNESS: I used this 16 study to support that statement. 17 BY MR. WATTS: 18 Q. And only this study? 19 MS. BROWN: Objection. 20 Misstates testimony. 21 THE WITNESS: This is a 22 study that I've used. 23 BY MR. WATTS: 24 Q. Was there any other study</p>	<p style="text-align: right;">Page 224</p> <p>1 MS. BROWN: Just give him a 2 minute to look at it. 3 BY MR. WATTS: 4 Q. It says, "Their calculations 5 purport to demonstrate that over 6 100 percent of the increase in autism 7 from 1987 to 1994 is an artifact of 8 changes in diagnostic practices. In your 9 editorial commentary, Eric Fombonne 10 praises the study, and claims Croen et 11 al. carefully analyzed the California 12 dataset. We disagree." 13 Did I read that correctly? 14 A. It appears that Dr. Blaxill, 15 or Mr. Blaxill, disagrees, yes. 16 Q. Let's go to his conclusion 17 on Page 226. 18 "Croen et al. support 19 arguments to set aside the growing body 20 of evidence that we have an epidemic of 21 autistic diseases. They have suggested 22 that 'diagnostic substitution' accounts 23 for an apparent increase in the incidence 24 of autism in California that is not real.</p>
<p style="text-align: right;">Page 223</p> <p>1 used? 2 A. I haven't used any other 3 studies in this particular reference. 4 Q. All right. Now, the reason 5 I ask that question is, are you familiar 6 with a Dr. Blaxill, B-L-A-X-I-L-L? 7 A. I am not. 8 Q. Let's look at what he had to 9 say about Croen in 2002. 10 Exhibit 410, please. 11 (Document marked for 12 identification as Exhibit 13 Kolevzon 410.) 14 BY MR. WATTS: 15 Q. This is a commentary by 16 Blaxill, Baskin, and Spitzer on Croen, 17 2002, "The Changing Prevalence of Autism 18 in California." 19 Have you seen this 20 commentary before? 21 A. I don't recall if I have or 22 not. 23 Q. And in the introductions, 24 just get to the meat of it.</p>	<p style="text-align: right;">Page 225</p> <p>1 This hypothesized substitution is not 2 supported by proper and detailed analyses 3 of the California data. On the contrary, 4 California continues to provide the 5 strongest evidence for the explosion in 6 the incidence of autism." 7 Did I read that correctly? 8 A. I don't agree with that 9 statement, but you did -- 10 Q. I didn't ask that. Did I 11 read it correctly? 12 MS. BROWN: Let him finish, 13 please. 14 THE WITNESS: You read it 15 correctly. 16 BY MR. WATTS: 17 Q. Okay. Have you ever seen 18 this before today? 19 A. I don't recall seeing this, 20 physically. 21 Q. Now, Croen in 2002 is the 22 one study you provided in support, and 23 yet Blaxill is saying it's wrong, right? 24 MS. BROWN: Objection.</p>

<p>Page 226</p> <p>1 Misstates the paper.</p> <p>2 THE WITNESS: So, again, I</p> <p>3 can represent the view of the</p> <p>4 scientific community in saying</p> <p>5 that there's clearly a consensus</p> <p>6 that younger age of diagnosis,</p> <p>7 change in diagnostic criteria, and</p> <p>8 educational shifts in sort of</p> <p>9 regulatory requirements have led</p> <p>10 to an increase in the diagnosis of</p> <p>11 autism. And there are some</p> <p>12 studies that support that, and, I</p> <p>13 imagine, there are some studies</p> <p>14 that don't support that.</p> <p>15 But, overall, the totality</p> <p>16 of the evidence suggest that, in</p> <p>17 fact, that's the case.</p> <p>18 MR. WATTS: Objection.</p> <p>19 Nonresponsive.</p> <p>20 MS. BROWN: Objection.</p> <p>21 BY MR. WATTS:</p> <p>22 Q. The one study that you cited</p> <p>23 is criticized as being wrong by Blaxill,</p> <p>24 which you have never seen before today,</p>	<p>Page 228</p> <p>1 Kolevzon 411.)</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Have you ever seen Croen's</p> <p>4 response published in April 2003 about</p> <p>5 the criticism to her 2002 study that you</p> <p>6 cited to?</p> <p>7 A. I don't recall.</p> <p>8 Q. And if we look at --</p> <p>9 MR. WATTS: Let's go to</p> <p>10 Column 2, Eric. First page.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Says, "Blaxill et al.</p> <p>13 correctly point out that age patterns of</p> <p>14 enrollment in this service system may be</p> <p>15 substantially different for autism and</p> <p>16 idiopathic MR and that truncated</p> <p>17 follow-up for children born during the</p> <p>18 more recent study years might</p> <p>19 differentially affect the observed trends</p> <p>20 in prevalence of these two disorders over</p> <p>21 the study period. That is, not only did</p> <p>22 we underascertain autism in the later</p> <p>23 years (which we acknowledged), but we may</p> <p>24 have underascertained MR to a</p>
<p>Page 227</p> <p>1 right?</p> <p>2 A. I don't have the</p> <p>3 opportunity --</p> <p>4 MS. BROWN: Objection to</p> <p>5 form.</p> <p>6 Go ahead.</p> <p>7 THE WITNESS: I don't have</p> <p>8 the opportunity to evaluate</p> <p>9 Blaxill's commentary.</p> <p>10 It's a commentary. It's not</p> <p>11 even peer-reviewed. I don't think</p> <p>12 it's fair for me to comment on it.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. Okay. Well, I'll tell you</p> <p>15 what. Let's comment on Exhibit 411,</p> <p>16 which is what Croen said about her own</p> <p>17 study after reading Blaxill.</p> <p>18 Exhibit 411 is entitled</p> <p>19 "Response: A Response to Blaxill,</p> <p>20 Baskin, and Spitzer on Croen (2002), "The</p> <p>21 Changing Prevalence in Autism in</p> <p>22 California," by Croen and Grether.</p> <p>23 (Document marked for</p> <p>24 identification as Exhibit</p>	<p>Page 229</p> <p>1 substantially greater degree (which we</p> <p>2 did not acknowledge). Blaxill et al.</p> <p>3 assert that the observed decline in</p> <p>4 idiopathic MR could be an artifact of a</p> <p>5 relatively later average age of entry</p> <p>6 into the system for children with this</p> <p>7 disorder."</p> <p>8 Did I read that correctly?</p> <p>9 MS. BROWN: Objection.</p> <p>10 Lacks foundation.</p> <p>11 THE WITNESS: It's</p> <p>12 impossible for me to comment on</p> <p>13 this without reading it.</p> <p>14 BY MR. WATTS:</p> <p>15 Q. Did I read it correctly?</p> <p>16 A. You read the words on the</p> <p>17 page.</p> <p>18 Q. Okay.</p> <p>19 A. But I can't make any kind of</p> <p>20 opinion about this.</p> <p>21 Q. Because you've never seen it</p> <p>22 before?</p> <p>23 A. If I have seen it before, I</p> <p>24 don't remember.</p>

<p style="text-align: right;">Page 230</p> <p>1 Q. You did not cite to it, did 2 you?</p> <p>3 A. It was not in my citations.</p> <p>4 Q. Let's go down further on the 5 column.</p> <p>6 "As a way of addressing the 7 criticisms by Blaxill et al. with our 8 original dataset, we have conducted a 9 reanalysis limiting the data to children 10 who had the same number of years of 11 follow-up across all study years."</p> <p>12 And if we go to the next 13 page, they conclude, based on that 14 reanalysis, that, "diagnostic 15 substitution does not appear to account 16 for the increased trend in autism 17 prevalence we observed in our original 18 analysis."</p> <p>19 Did you know that they had 20 to reanalyze and retract what they said 21 before?</p> <p>22 MS. BROWN: I object to the 23 reading of part of that sentence 24 as incomplete.</p>	<p style="text-align: right;">Page 232</p> <p>1 THE WITNESS: In order for 2 me to comment on this paper, I 3 need time to read it, understand 4 the methods, understand exactly 5 what she's saying needed to be 6 changed or not changed. I don't 7 have time to do that.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. Because you've never seen it 10 before today, have you?</p> <p>11 A. If I've seen it, I don't 12 remember. So in order to comment on it, 13 I need to read it carefully.</p> <p>14 Q. And let's go to Page 229. 15 "We agree with Blaxill et 16 al. that the slight degree of diagnostic 17 substitution we observed in these samples 18 would not explain the dramatic increase 19 in the probability of becoming a DDS 20 client for autism by age four."</p> <p>21 Did I read that correctly?</p> <p>22 A. You read the words on the 23 page. 24 Nobody is implying that</p>
<p style="text-align: right;">Page 231</p> <p>1 THE WITNESS: There's no 2 doubt that people who were 3 previously diagnosed with 4 intellectual disability are now 5 being diagnosed with autism 6 spectrum disorder.</p> <p>7 There's no doubt that prior 8 to 1990 people with autism were 9 not guaranteed educational 10 services, whereas afterwards they 11 were.</p> <p>12 And there's no doubt that 13 that's some diagnostic 14 substitution going on.</p> <p>15 MR. WATTS: Objection. 16 Nonresponsive.</p> <p>17 MS. BROWN: Object.</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Were you aware that Croen in 20 2003 had to acknowledge that her 21 methodology that you cited to, she did in 22 2002, was wrong?</p> <p>23 MS. BROWN: I object. That 24 misstates the paper.</p>	<p style="text-align: right;">Page 233</p> <p>1 diagnostic substitution is the 2 explanation for the entire increase in 3 prevalence. It's one among many, many 4 factors.</p> <p>5 Q. And, in fact, you know that 6 this same dataset was later analyzed, and 7 it was only a quarter of the increase, 8 don't you?</p> <p>9 MS. BROWN: Objection. 10 Lacks foundation.</p> <p>11 THE WITNESS: I'm not aware 12 of that specifically.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. Well, in previous cases, you 15 cited to a paper by Keane and Berman, 16 haven't you?</p> <p>17 A. It may be true.</p> <p>18 Q. Let's go to Exhibit 479, 19 which was your report in the 20 Daniels-Feasel case, Pages 9 and 10 of 21 94.</p> <p>22 At the bottom of 9, it says, 23 "For example, Keane and Berman in 2009 24 estimated that one-fourth of the observed</p>

<p style="text-align: right;">Page 234</p> <p>1 increase in ASD prevalence in California 2 between 1992 and 2005 was a direct 3 consequence of diagnostic exchange 4 between ID and autism." 5 Do you see that, sir? 6 A. That's what it says, yes. 7 Q. So you said that in the 8 Daniels-Feasel case five years ago. Did 9 you even cite to Keane and Berman in this 10 report? 11 A. I don't recall whether I did 12 or didn't. 13 Q. Well, is Keane and Berman 14 even in your materials considered? 15 MS. BROWN: Objection to the 16 form. 17 THE WITNESS: I don't know 18 if it is or isn't. 19 MR. WATTS: Go to Page 30 of 20 Exhibit 404, which is his 21 materials considered list. 22 MS. BROWN: What is the 23 exhibit? 24 MR. WATTS: 404. His</p>	<p style="text-align: right;">Page 236</p> <p>1 opinions are the same. The trends 2 are the same. The explanation is 3 the same. 4 I've not included one 5 reference that supports that. 6 BY MR. WATTS: 7 Q. Now, if Keane and Berman 8 said changes in practices for 9 diagnostic -- diagnosing autism accounted 10 for only one-fourth of the observed 11 increase in prevalence in California, 12 that means three-quarters of the increase 13 has to be explained by other factors, 14 right? 15 MS. BROWN: Objection. 16 Lacks foundation. 17 THE WITNESS: There are many 18 other factors, many of which I've 19 described here, which include 20 change in diagnostic criteria, 21 younger age of diagnosis. And 22 other just cultural shifts in the 23 acceptance of the diagnosis. 24 BY MR. WATTS:</p>
<p style="text-align: right;">Page 235</p> <p>1 materials considered list. 2 Page 30. 3 (Document marked for 4 identification as Exhibit 5 Kolevzon 404.) 6 BY MR. WATTS: 7 Q. If you cited to Keane and 8 Berman, it should be right between Entry 9 Number 2 and Entry Number 3, between Kim 10 and Kristen -- or Kirsten, right? And 11 it's not there. 12 A. It does not appear to be 13 there. 14 Q. Can you explain for the 15 ladies and gentlemen of the jury why, in 16 2018, you explained that only 25 percent 17 of the increase is because of this; and 18 in 2023, you just took out the reference 19 altogether, suggesting something entirely 20 otherwise? 21 MS. BROWN: I object. That 22 completely misstates these 23 documents. 24 THE WITNESS: So the</p>	<p style="text-align: right;">Page 237</p> <p>1 Q. Now, have you done any 2 sort -- going back to 545, please. 3 Have you done any sort of 4 work to be able to tell the ladies and 5 gentlemen of the jury what the percentage 6 of the rate increases explained by these 7 five examples that you gave? 8 A. I don't think I'm able to do 9 that, sitting here today. 10 Q. Well -- 11 A. I think it's clear that all 12 these factors have contributed to the 13 rise in prevalence, for sure. 14 Q. You can't add it up to 15 100 percent, can you? 16 MS. BROWN: Objection. 17 BY MR. WATTS: 18 Q. Not even close. 19 MS. BROWN: Objection to the 20 form. 21 THE WITNESS: So I haven't 22 added it up. I haven't done a 23 calculation. 24 The point here is that</p>

Page 238

1 there's an enormous increase in
 2 the prevalence of autism. That
 3 the true increase -- the true --
 4 the true incidence has not
 5 actually changed. And that much
 6 of the increase in prevalence can
 7 be accounted for by these factors.
 8 BY MR. WATTS:
 9 Q. Is it much of the increase,
 10 some of the increase, a small percentage
 11 of the increase, or all the increase?
 12 A. I'm not going to guess.
 13 Q. You don't know?
 14 MS. BROWN: Objection to the
 15 form.
 16 THE WITNESS: Was that a
 17 question?
 18 BY MR. WATTS:
 19 Q. Yep.
 20 A. What's the question?
 21 Q. You don't know what
 22 percentage of the increase of prevalence
 23 is accounted for by these supposed
 24 artifactual excuses you give versus

Page 239

1 environmental, do you?
 2 MS. BROWN: Objection.
 3 Argumentative. Lacks foundation.
 4 THE WITNESS: So I'm not
 5 sure that you can use the word
 6 "excuses" to characterize it,
 7 first of all.
 8 I can't, at this moment,
 9 assign values, because this would
 10 probably require mathematical
 11 modeling that I'm not able to do,
 12 certainly not sitting here today.
 13 BY MR. WATTS:
 14 Q. Other people have done that
 15 mathematical modeling and concluded that
 16 there's got to be something else
 17 environmental going on, haven't they?
 18 MS. BROWN: Objection to the
 19 form. Lacks foundation.
 20 THE WITNESS: So it's clear
 21 that there are potentially
 22 environmental effects, because
 23 heritability is not 100 percent.
 24 However, those environmental

Page 240

1 effects are, as of yet, basically
 2 unknown and certainly do not
 3 include acetaminophen.
 4 BY MR. WATTS:
 5 Q. Doctor, other people have
 6 done the work to figure out what
 7 percentage of the rate of prevalence
 8 increase is attributable artifact versus
 9 it's got to be environmental, haven't
 10 they? You've seen that?
 11 A. So I would object to the
 12 "got to be environmental" part.
 13 Q. Okay. Let me show you
 14 Exhibit 418 as one example.
 15 (Document marked for
 16 identification as Exhibit
 17 Kolevzon 418.)
 18 BY MR. WATTS:
 19 Q. And this is an article
 20 written by Martha [sic] Cone in 2009, and
 21 I just want to give you a couple of
 22 quotes in this article.
 23 At the bottom of the first
 24 page, top of the second --

Page 241

1 MS. BROWN: Well, he's not
 2 familiar with it. Let's let him
 3 read it first.
 4 MR. WATTS: Split the page.
 5 BY MR. WATTS:
 6 Q. It quotes Martha -- Irva
 7 Hertz-Picciotto, an epidemiology
 8 professor at the University of
 9 California, Davis, who led the study.
 10 She says, "It's time to start looking for
 11 the environmental culprits responsible
 12 for the remarkable increase in the rate
 13 of autism in California."
 14 This is a doctor that you
 15 have published with in the past, right?
 16 MS. BROWN: Objection.
 17 Lacks foundation.
 18 Can he read the article
 19 first.
 20 BY MR. WATTS:
 21 Q. Sir, have you published with
 22 her?
 23 A. I may have.
 24 Q. Okay. All we have to do is

Page 242

1 type in Picciotto --
 2 A. Yeah.
 3 Q. -- into the file of your
 4 publications, and we'll see it or not,
 5 right?
 6 A. Of course.
 7 Q. Okay.
 8 And if we go to Page 3 of 6
 9 it says, "The California researchers
 10 concluded that doctors are diagnosing
 11 autism at a younger age because of
 12 increased awareness. But that change is
 13 responsible for only about a 24 percent
 14 increase in children reported to be
 15 autistic by the age.
 16 "A shift towards younger
 17 age at diagnosis was clear but not huge,'
 18 the report says.
 19 "Also, a shift in doctors
 20 diagnosing milder cases explains another
 21 56 percent. And changes in state
 22 reporting of the disorder could account
 23 for around a 120 percent increase.
 24 "Combined, Hertz-Picciotto

Page 243

1 says those factors 'don't get us close'
 2 to the 600 to 700 percent increase in
 3 diagnosed cases."
 4 Did I read that correctly?
 5 A. You're reading from a
 6 web-based article by somebody that I've
 7 never heard of, relying on information
 8 that I'm not able to verify.
 9 Q. You've never heard of
 10 Dr. Hertz-Picciotto?
 11 A. No. I have never heard of
 12 Marla Cone, who wrote this article.
 13 Q. Okay. But the quote from
 14 Hertz-Picciotto, have you ever talked to
 15 her about her opinions in this regard?
 16 A. I have not talked to her --
 17 to her about it personally, no.
 18 Q. And if we go farther down
 19 the page, she's quoted again. After she
 20 says they don't come close to getting us
 21 to the 6- to 700 percent increase, it
 22 says, "'There's genetics and there's the
 23 environment. And genetics don't change
 24 in such short periods of time,'

Page 244

1 Hertz-Picciotto, a researcher at UC Davis
 2 M.I.N.D. Institute, a leading autism
 3 research facility, said in an interview
 4 on Thursday."
 5 Do you agree with that
 6 statement?
 7 A. I agree with parts of that.
 8 And I think that it's clear there are
 9 both genetic, which makes up the vast
 10 majority of the cause of autism, and
 11 then, likely, some environmental risk
 12 factors that we have, as of yet, not
 13 reliably identified.
 14 Q. Now, I want to talk to you
 15 about that last statement that you just
 16 made.
 17 First of all, you have
 18 stated in many papers and depositions
 19 that autism spectrum disorder is a
 20 heterogenous condition, right?
 21 A. Both clinically and
 22 genetically, yes.
 23 Q. Okay. And for people who
 24 don't talk like doctors, heterogeneity

Page 245

1 means what?
 2 A. There are a lot of different
 3 genetic causes and there are a lot of
 4 different symptoms.
 5 Q. Okay. A lot of different
 6 environmental causes.
 7 A. So, hypothetically. It's a
 8 speculation at this point, but it's
 9 certainly possible.
 10 Q. Now, let's see if we can go
 11 about it this way.
 12 Would you agree with me that
 13 if somebody fractures their femur, the
 14 fractured femur is a broken leg, right?
 15 MS. BROWN: Objection.
 16 Incomplete hypothetical.
 17 THE WITNESS: I'm not an
 18 orthopedic surgeon, but in
 19 layperson's terms I would assume
 20 that to be the case, yes.
 21 BY MR. WATTS:
 22 Q. The fractured femur is not
 23 the cause of the broken leg, it's the
 24 result, right?

<p style="text-align: right;">Page 246</p> <p>1 MS. BROWN: Objection to the</p> <p>2 form of the question.</p> <p>3 THE WITNESS: Depends.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. Well, if I put a bat to your</p> <p>6 femur -- and I wouldn't do that to you --</p> <p>7 but if I did and I broke your femur, the</p> <p>8 swinging of the bat is the cause of your</p> <p>9 broken leg, right?</p> <p>10 MS. BROWN: Objection to the</p> <p>11 form of the question.</p> <p>12 THE WITNESS: It depends.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. Well, autism, does it result</p> <p>15 from a gene change that occurs?</p> <p>16 MS. BROWN: Objection.</p> <p>17 Vague.</p> <p>18 THE WITNESS: The only</p> <p>19 commonly accepted cause of autism</p> <p>20 today, as we understand it, is</p> <p>21 genetic in origin.</p> <p>22 MR. WATTS: Objection.</p> <p>23 Nonresponsive.</p> <p>24 MS. BROWN: Object.</p>	<p style="text-align: right;">Page 248</p> <p>1 on this, "It is, because I say it is."</p> <p>2 Does autism ever happen</p> <p>3 without a change in genetic composition</p> <p>4 or gene expression?</p> <p>5 MS. BROWN: Objection.</p> <p>6 Calls for speculation.</p> <p>7 THE WITNESS: So to the</p> <p>8 state of our knowledge today, the</p> <p>9 only reliable, replicated,</p> <p>10 consistent causal factor in autism</p> <p>11 is genetic in origin.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Okay. That wasn't my</p> <p>14 question.</p> <p>15 The change in the gene is</p> <p>16 the broken leg, right? It's the</p> <p>17 consequence that manifests itself through</p> <p>18 clinical conditions that you call autism,</p> <p>19 right?</p> <p>20 MS. BROWN: Objection to the</p> <p>21 form of the question. Lacks</p> <p>22 foundation. Vague.</p> <p>23 THE WITNESS: I think you</p> <p>24 need to clarify the question.</p>
<p style="text-align: right;">Page 247</p> <p>1 BY MR. WATTS:</p> <p>2 Q. Do you know what the phrase</p> <p>3 "ipsi dixit" means?</p> <p>4 MS. BROWN: Objection to the</p> <p>5 form of the question.</p> <p>6 THE WITNESS: I do, but only</p> <p>7 because I read a deposition</p> <p>8 yesterday.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. Okay.</p> <p>11 MS. BROWN: You guys are</p> <p>12 asking the same questions.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. Did you read --</p> <p>15 A. And I took Latin in high</p> <p>16 school.</p> <p>17 Q. Yeah. Did you read "Alice</p> <p>18 in Wonderland"? It is, because I say it</p> <p>19 is.</p> <p>20 A. Yes.</p> <p>21 MS. BROWN: Objection to</p> <p>22 form.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. And so let's -- let's probe</p>	<p style="text-align: right;">Page 249</p> <p>1 BY MR. WATTS:</p> <p>2 Q. Well, let's see if we can go</p> <p>3 about it this way.</p> <p>4 There are all sorts of study</p> <p>5 about what causes that change in the</p> <p>6 gene, right?</p> <p>7 MS. BROWN: Objection.</p> <p>8 Vague.</p> <p>9 THE WITNESS: There are some</p> <p>10 studies that explore what are</p> <p>11 called epigenetic factors. Other</p> <p>12 studies that very, very clearly</p> <p>13 document that de novo,</p> <p>14 spontaneous, what are called</p> <p>15 stochastic mutations occur at the</p> <p>16 time of conception.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Okay. So we're going to get</p> <p>19 into all of that, but let's keep it on a</p> <p>20 global fifth-grade level.</p> <p>21 Is there any, according to</p> <p>22 you, any case of autism that exists</p> <p>23 without a modification of the gene of</p> <p>24 some sort?</p>

Page 250

1 MS. BROWN: Objection.
 2 Vague. Calls for speculation.
 3 THE WITNESS: The current
 4 understanding is that the only
 5 accepted cause of autism is
 6 genetic in origin.
 7 BY MR. WATTS:
 8 Q. And we're almost getting
 9 there.
 10 When you say genetic in
 11 origin, something happened to the gene --
 12 A. Yep.
 13 Q. -- that altered it, right?
 14 MS. BROWN: Objection.
 15 Vague.
 16 THE WITNESS: So by
 17 "something," what do you mean?
 18 BY MR. WATTS:
 19 Q. Well, we're going to get
 20 there.
 21 But in order to have autism,
 22 you have to have a changed gene from
 23 what's normal, right?
 24 MS. BROWN: Objection.

Page 251

1 Lacks foundation.
 2 THE WITNESS: I mean, it
 3 could be sort of a common
 4 variation that might manifest as
 5 normal in one individual, but as
 6 it's inherited and interacting
 7 with other genes, could be
 8 pathologic in another individual.
 9 BY MR. WATTS:
 10 Q. See if can go about it this
 11 way.
 12 I do a lot of pesticide
 13 work.
 14 A. Yeah.
 15 Q. Tell the jury what a
 16 clastogen is.
 17 A. I'm not a pesticide expert.
 18 I have no idea.
 19 Q. You are not aware of what a
 20 clastogenic substance?
 21 A. A what?
 22 Q. A clastogenic substance.
 23 A. Clastogenic? No --
 24 Q. Clastogenic,

Page 252

1 C-L-A-S-T-O-G-E-N-I-C.
 2 A. I think that's well outside
 3 of my area of expertise.
 4 Q. Okay. If I tell you that
 5 it's a mutagenic agent that disturbs
 6 normal DNA-related process, causes DNA
 7 strand breakages, deletion of entire
 8 chromosome sections, insertion of
 9 chromosome sections, rearrangements of
 10 chromosome sections, does that make a lot
 11 of sense to you?
 12 A. All of that make sense.
 13 MS. BROWN: Objection. It
 14 lacks foundation.
 15 BY MR. WATTS:
 16 Q. Okay. So a clastogen is
 17 something that alters the genetic
 18 presentation, right?
 19 MS. BROWN: Object. Lacks
 20 foundation.
 21 THE WITNESS: So, again, I
 22 don't know what a clastogen is, so
 23 it's hard for me to comment about
 24 it.

Page 253

1 But what you asked me was,
 2 did that string of words make
 3 sense.
 4 BY MR. WATTS:
 5 Q. Yeah. And it did, didn't
 6 it?
 7 MS. BROWN: Let him finish.
 8 THE WITNESS: Those -- those
 9 string of words make sense. There
 10 is the possibility.
 11 BY MR. WATTS:
 12 Q. Okay. There are
 13 environmental products that are
 14 clastogenic because they can alter the
 15 general metallic presentation in the way
 16 that I just described, right?
 17 MS. BROWN: Objection.
 18 Lacks foundation.
 19 THE WITNESS: This is,
 20 again, outside of my area of
 21 expertise.
 22 BY MR. WATTS:
 23 Q. Okay. But in that
 24 situation, if you have a substance, when

<p style="text-align: right;">Page 254</p> <p>1 somebody is exposed to it, it results in 2 their change of their genetic 3 presentation. The substance caused the 4 change in the genetic presentation; 5 agreed?</p> <p>6 MS. BROWN: Object. It 7 lacks foundation. It's an 8 incomplete hypothetical, and the 9 doctor has already said it's 10 outside his area of expertise.</p> <p>11 THE WITNESS: So I'm happy 12 to talk about this as it relates 13 to autism, which I think is what 14 my area of expertise is and what I 15 came here to testify about.</p> <p>16 BY MR. WATTS: 17 Q. Okay. I really need you to 18 answer my question.</p> <p>19 MS. BROWN: He did.</p> <p>20 BY MR. WATTS: 21 Q. If a pollutant, for example, 22 is a clastogen and results in an 23 interruption of the genetic presentation, 24 either deletion, insertion, the</p>	<p style="text-align: right;">Page 256</p> <p>1 Mr. Watts. 2 Let's behave.</p> <p>3 BY MR. WATTS: 4 Q. Let's -- let's get boned up 5 on that before trial, okay?</p> <p>6 MS. BROWN: That's not 7 appropriate.</p> <p>8 BY MR. WATTS: 9 Q. Now, let me ask you this. 10 When you don't know what caused the 11 change in gene presentation, you all call 12 that idiopathic autism, right?</p> <p>13 MS. BROWN: Objection to the 14 form.</p> <p>15 THE WITNESS: Idiopathic 16 autism is defined as autism where 17 we don't have an identified gene, 18 yeah.</p> <p>19 BY MR. WATTS: 20 Q. And over time, in your 21 testimonies in the last five years, 22 you've said in the Huddleston deposition, 23 "80 percent of the time there is no 24 specific gene identified as the cause,"</p>
<p style="text-align: right;">Page 255</p> <p>1 rearrangement of entire chromosome 2 sections or DNA strand break. That 3 substance is the cause of the change in 4 the genetic presentation; would you agree 5 with me?</p> <p>6 MS. BROWN: Object. It 7 lacks foundation. 8 He already said he doesn't 9 know what a clastogen is.</p> <p>10 MR. WATTS: Well, that's 11 shocking.</p> <p>12 THE WITNESS: I don't feel 13 comfortable testifying about the 14 structural damage that pollutants 15 may or may not cause.</p> <p>16 BY MR. WATTS: 17 Q. Okay. And part of the 18 reason, you don't even know what a 19 clastogen is, do you?</p> <p>20 A. I have never heard that 21 particular term before.</p> <p>22 Q. I am frankly shocked.</p> <p>23 MS. BROWN: That's 24 inappropriate, and you know that,</p>	<p style="text-align: right;">Page 257</p> <p>1 right?</p> <p>2 A. I think at the time of that 3 deposition, that was probably the correct 4 number. That number changes over time.</p> <p>5 Q. Okay. And to be fair, more 6 recently you said it's more like 7 70 percent of the time we don't know what 8 caused it, right?</p> <p>9 A. That's probably a more 10 accurate reflection of where we are 11 today.</p> <p>12 Q. Okay. And to your credit, 13 and others studying it, we're learning as 14 we go, right?</p> <p>15 A. We are in an exponential 16 phase of discovery, yes.</p> <p>17 Q. All right. Now, let's talk 18 about the concept of heritability versus 19 de novo genetic changes, okay.</p> <p>20 First of all, from the 21 standpoint of common variants, are common 22 variants, by definition, inherited 23 variants?</p> <p>24 A. Common variants are thought</p>

Page 258

1 to be inherited variants, yes.

2 Q. Okay. And with respect to

3 the common variants, we can use something

4 called monozygotic twin studies to look

5 for concordance between the two twins in

6 terms of how often they have autism, both

7 of them, versus one of them, right?

8 A. That's how you define

9 heritability, yes.

10 Q. Okay. Now, let me give you

11 an example of that. And we're just going

12 to go through this step-by-step.

13 Exhibit 438 is a paper by

14 Gaugler that you cite in your report.

15 A. Yeah.

16 (Document marked for

17 identification as Exhibit

18 Kolevzon 438.)

19 BY MR. WATTS:

20 Q. And if we could go to Page 3

21 of Exhibit 438.

22 And Gaugler --

23 A. Sorry, this is a press

24 release from Mount Sinai about this

Page 259

1 paper. And all I have is a bunch of

2 papers. I don't have the actual...

3 MS. BROWN: Is this 438?

4 MR. WATTS: Yeah, I think

5 you're --

6 MS. BROWN: I gave you 435.

7 That's my fault. Here you go.

8 MR. WATTS: Okay. Strike

9 what he just said. He didn't mean

10 it.

11 BY MR. WATTS:

12 Q. I get it, you were given the

13 wrong document.

14 Now we're on 438, let's talk

15 together. This is the Gaugler manuscript

16 entitled, "Most Genetic Risks For Autism

17 Reliance on Common Variation," and it's

18 in the NIH Public Access author

19 manuscript, right?

20 A. Yes, from 2014.

21 Q. From 2014.

22 And I want to take you to

23 Page 3, and part of what he says on

24 Page 3 is "A recent, large study of twins

Page 260

1 places heritability at 38 percent."

2 Do you see that?

3 A. Yep.

4 Q. Now, he cites to

5 Footnote 20; is that right?

6 A. Yeah. It's probably the

7 Hallmayer study.

8 Q. I'm sorry? Say what you

9 said.

10 A. It's probably the Hallmayer

11 study.

12 Q. Okay. And when was the

13 Hallmayer study?

14 A. Yeah. 2011.

15 Q. Okay. And that's a study

16 with which you are familiar?

17 A. I am.

18 Q. And the Hallmayer study

19 placed the heritability of autism at

20 38 percent, right?

21 A. The Hallmayer study was one

22 among 14 or 15 studies that had overblown

23 estimates -- or underblown underestimates

24 of heritability.

Page 261

1 Q. That wasn't my question. My

2 question was, the Hallmayer study placed

3 heritability at 38 percent, correct?

4 A. I think that they looked at

5 different ways of measuring, and, yes,

6 one of the estimates was 38 percent.

7 Q. And it's being cited by

8 Gaugler, which is one of the papers that

9 you cited in your report, right?

10 A. Yes.

11 Q. Okay. Now, you, saying that

12 Hallmayer was low, have more recently

13 said that common variations contribute to

14 about half of the autism risk, right?

15 A. That's what it's thought of,

16 yes.

17 Q. Okay. So by virtue of that

18 statement which you've said several

19 times, to be fair to you, your position

20 is, is that half of the risk of autism is

21 inherited from parents; is that right?

22 MS. BROWN: Objection.

23 Lacks foundation.

24 THE WITNESS: So this is

Page 262

1 complicated, because --

2 BY MR. WATTS:

3 Q. Let me re-ask the question.

4 MS. BROWN: Can we --

5 BY MR. WATTS:

6 Q. I see why you're saying it's

7 complicated. Let me see if I can go

8 about it this way.

9 You remember how we talked

10 about 20 or 30 percent are genes that we

11 know and the rest we don't know?

12 Did you mean to say that of

13 the genetic source that we have, half of

14 that is common variation?

15 A. About that, yes.

16 Q. Okay. And common variation

17 is, in effect, inherited variation,

18 right?

19 A. Yep.

20 Q. Okay. Now I want to play

21 you a video that I think does it pretty

22 well from the standpoint of Dr. Chung,

23 and I think there was an intention to

24 play this for her on Wednesday. But I

Page 263

1 want to ask your thoughts about it.

2 Okay. Give me just a

3 second.

4 (Document marked for

5 identification as Exhibit

6 Kolevzon 549.)

7 MS. BROWN: We're playing a

8 video for Dr. Kolevzon of

9 Dr. Chung.

10 MR. WATTS: We absolutely

11 are doing that.

12 MS. BROWN: All right. I'm

13 going to object as lacking

14 foundation, as I suspect

15 Dr. Kolevzon hasn't seen it

16 before.

17 MR. WATTS: Okay. Objection

18 overruled. We're going to keep

19 going -- I'm kidding.

20 BY MR. WATTS:

21 Q. Exhibit 549. Just play the

22 video, and I'll ask your thoughts about

23 it.

24 TRIAL TECH: I'm sorry,

Page 264

1 which one?

2 MR. WATTS: Exhibit 549.

3 (Video played.)

4 DR. CHUNG: You take two

5 identical twins, and you ask

6 yourself, if one twin has autism,

7 what is the probability that the

8 other twin has autism? If this

9 were genetic, if it were entirely

10 genetic, what would you think that

11 answer should be?

12 100 percent. Absolutely.

13 Is that number up there

14 100 percent? Absolutely not.

15 77 percent. Some people have

16 estimated 80 percent. But it's

17 not 100 percent.

18 So there's some difference

19 that not, at least not in the

20 genes that happened right at the

21 time of fertilization. But

22 there's some change, some

23 difference between the two of

24 them. That number is high,

Page 265

1 though.

2 So as an example, as a

3 comparison, now, if you take

4 fraternal twins, right. So these

5 are cases that are like brother

6 and sister, but they share the

7 same in utero environment. They

8 can be in the same household.

9 They share the same -- some of the

10 same postnatal factors. And if

11 you look at that, they share

12 50 percent of their genomes, or

13 50 percent of their genetic

14 information. The concordance rate

15 between those is 31 percent.

16 But now take as an

17 interesting comparator to that,

18 siblings. So these are, again,

19 genetically sharing 50 percent of

20 their genetic information, but

21 they don't share the same in utero

22 environment. They don't

23 necessarily share the same

24 exposures after they are born.

<p>Page 266</p> <p>1 And in that particular case, it's 2 lower. Right. Statistically, 3 significantly lower, only 4 20 percent in those cases. 5 And in the general 6 population, as you've heard, it's 7 about 1 percent, or, these days, 1 8 in 59 individuals with autism. 9 So what does that tell me? 10 What that tells me is, there are 11 some genes. I don't -- doesn't 12 tell me what the genes are, but it 13 tells me genes are important in 14 that, but it's not all in the 15 genes, right. 16 Part of it is genes, part of 17 it is something else. 18 (Video playback ended.) 19 BY MR. WATTS: 20 Q. Her description -- and I 21 played it because it's all very 22 compact -- about the difference in autism 23 rates between identical twins, lower in 24 fraternal twins, lower than that in</p>	<p>Page 268</p> <p>1 BY MR. WATTS: 2 Q. Entitled, "Convergence of 3 Genes and Cellular Pathways Dysregulated 4 in Autism Spectrum Disorder," published 5 in The American Journal of Human 6 Genetics, Volume 94, Issue 5, of May 1st, 7 2014. The first author is Dalila Pinto. 8 Do you see that? 9 A. Yes. 10 Q. And if you go about halfway 11 down all the -- all the authors? 12 A. Yeah, I know. This is -- I 13 know what this is. 14 Q. Okay. There is your name, 15 correct? 16 A. Yep. 17 Q. And if we go to Page 15 of 18 43, and we highlight, it says, 19 "Inheritance data showed that 64 percent 20 of pathogenic CNVs were de novo 21 events" -- and we'll get to that in a 22 second -- "and the remaining (36 percent) 23 were inherited." 24 Do you see that?</p>
<p>Page 267</p> <p>1 brothers and sisters, you agree with that 2 as a concept, right? 3 MS. BROWN: Objection. 4 THE WITNESS: Yes. 5 BY MR. WATTS: 6 Q. Okay. Now, you said 7 Hallmayer was low when it said that only 8 36 percent is nonheritable, right? 9 A. 30 -- I said it was low and 10 36 percent was heritable. 11 Q. Yes, I'm sorry. Yes, I 12 misstated. 13 You have in a paper since 14 then said that 36 percent is inherited, 15 right? 16 MS. BROWN: Objection to 17 form. 18 THE WITNESS: Say it again. 19 BY MR. WATTS: 20 Q. Well, let me just show it to 21 you. Exhibit 434. 22 (Document marked for 23 identification as Exhibit 24 Kolevzon 434.)</p>	<p>Page 269</p> <p>1 A. Yes. 2 Q. Okay. Now, because you put 3 this in the same sentence -- 4 A. But -- 5 Q. Let me just say, what is a 6 de novo event, first of all? 7 A. All right. So to clarify, 8 when it says inherited here, that's 9 many -- that's among the things that are 10 considered to be heritable. 11 De novo just means that it 12 occurred spontaneously, so it was not 13 specifically passed on from a parent. So 14 the common variations exist in parents 15 but are not causing any clinical 16 symptoms. 17 Q. Now -- 18 A. When they are inherited to 19 the child, they can interact with other 20 genes and cause clinical symptoms, which 21 is different than other heritable genetic 22 factors which can occur within the sperm 23 or the egg. So they are still 24 essentially passed on, right. They are</p>

Page 270

1 just not common variations.
 2 So they can either be de
 3 novo, rare variations, or even some de
 4 novo, rather, rare inherited variations.
 5 So this 36 percent
 6 represents the universe -- a piece of the
 7 universe that is considered to be
 8 heritable.
 9 Q. Okay. Now, here is my
 10 question. I think it was about what is a
 11 de novo gene mutation --
 12 A. Just means spontaneously
 13 occurred.
 14 Q. Okay. Go back to my example
 15 about the clastogenic chemical that
 16 alters a gene presentation.
 17 Does that go in the de novo
 18 category?
 19 A. Generally speak --
 20 MS. BROWN: Objection to the
 21 hypothetical.
 22 Go ahead.
 23 THE WITNESS: When it comes
 24 to autism, the de novo mutations

Page 271

1 that we've identified, that we
 2 know cause autism, occur at the
 3 time of conception.
 4 BY MR. WATTS:
 5 Q. I'm asking, if that mutation
 6 which results from environmental
 7 exposure -- I'll give you that it happens
 8 at the time of conception -- is that in
 9 the de novo category?
 10 A. Can you repeat the question?
 11 Q. When you talk about de novo
 12 mutations, those are nonheritable, right?
 13 A. No. De novo mutations are
 14 heritable.
 15 Q. Well, what about ones from
 16 the environment, are they de novo?
 17 MS. BROWN: I object to the
 18 question. It doesn't make sense.
 19 THE WITNESS: I don't know
 20 what you mean by ones from the
 21 environment.
 22 BY MR. WATTS:
 23 Q. Well, when you use the
 24 phrase "de novo," does it include

Page 272

1 environmentally caused increase in risk
 2 because of a gene mutation that an
 3 environmental agent caused, yes or no?
 4 MS. BROWN: Objection.
 5 Vague. Lacks foundation.
 6 THE WITNESS: So
 7 heritability is defined by the
 8 concordance or discordance between
 9 monozygotic and dizygotic twins.
 10 BY MR. WATTS:
 11 Q. Done that. Now de novo.
 12 A. De novo mutations in the
 13 case of autism that have been identified
 14 up until now occur when sperm meets egg.
 15 Q. I understand when it occurs.
 16 I'm saying why it's occurring.
 17 A. So the current state of our
 18 understanding, that these things are what
 19 are called stochastic; they are random.
 20 Q. So we're back to idiopathic
 21 autism. You just don't know what's
 22 causing it yet, is what you're saying.
 23 A. No, we know what's causing
 24 it. There's the gene that's causing it.

Page 273

1 Q. Well --
 2 A. Why does the gene mutate?
 3 We don't necessarily know.
 4 Q. But there's strong evidence
 5 that nonheritable, pre- and perinatal
 6 events are likely to also have an
 7 etiological role?
 8 MS. BROWN: In autism?
 9 MR. WATTS: Yep.
 10 THE WITNESS: So in autism,
 11 because the heritability is not
 12 100 percent, there are likely
 13 environmental events that play a
 14 role, they just are, as of yet,
 15 unidentified.
 16 And bringing it back to this
 17 case, when you look at the
 18 literature around acetaminophen,
 19 it's certainly not considered a
 20 risk factor.
 21 BY MR. WATTS:
 22 Q. Well, look, let's go back to
 23 2011, before you were ever hired in this
 24 case, and let's look at the first edition

<p style="text-align: right;">Page 274</p> <p>1 of the Textbook of Autism Spectrum 2 Disorders.</p> <p>3 MR. WATTS: Exhibit 422.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. And if we go to Page 239. 6 You, Reichenberg, Gross and Susser write, 7 "Parental and Perinatal Risk Factors for 8 Autism." 9 And the very second sentence 10 in your book chapter is, "Yet there is 11 strong evidence that nonheritable pre- or 12 perinatal events are also likely to have 13 an etiological role," right?</p> <p>14 A. Because heritability is not 15 100 percent, there are going to be 16 nonheritable events that likely play an 17 etiological role.</p> <p>18 Q. And in the book chapter that 19 didn't make its way into your CV, you 20 said the same thing 11 years later in the 21 second edition, right?</p> <p>22 MS. BROWN: Objection to the 23 form of the question.</p> <p>24 THE WITNESS: I'm sure I</p>	<p style="text-align: right;">Page 276</p> <p>1 Q. And that sentence doesn't 2 use the word "theoretically" at all, does 3 it? It says there is strong evidence 4 that it's true.</p> <p>5 A. Well, it's -- there's strong 6 evidence it's true, based on twin studies 7 that show that heritability is not 8 100 percent.</p> <p>9 Q. Now, Doctor, I want to play 10 you another video from Dr. Chung, 11 Exhibit 549, and get your comment on it.</p> <p>12 MS. BROWN: And same 13 objections to the Dr. Chung 14 videos.</p> <p>15 And could we also, Counsel, 16 identify them for the record? 17 Dates, where they came from?</p> <p>18 MR. WATTS: Sure. This one 19 is December 16, 2018.</p> <p>20 MS. BROWN: Okay. And for 21 the other one, we can go back and 22 fill it in, please.</p> <p>23 MR. WATTS: Yeah, I'll do 24 that.</p>
<p style="text-align: right;">Page 275</p> <p>1 said something similar, because it 2 continues to be true.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. And an etiological role 5 means what?</p> <p>6 A. Causal role.</p> <p>7 Q. Okay. So a prenatal event 8 means what?</p> <p>9 A. Prenatal just means before 10 the time of birth.</p> <p>11 Q. And perinatal means during 12 the time of birth, right?</p> <p>13 A. Birth and delivery, yeah.</p> <p>14 Q. And so, yet, there is strong 15 evidence that nonheritable 16 before-the-time-of-birth or 17 during-the-time-of-birth events are 18 likely to also have a causal role.</p> <p>19 That's what that sentence 20 means, right?</p> <p>21 A. So, theoretically, because 22 heritability is not 100 percent, there 23 are likely going to be prenatal and 24 perinatal events that play a causal role.</p>	<p style="text-align: right;">Page 277</p> <p>1 MS. BROWN: Thank you. 2 (Video played.)</p> <p>3 DR. CHUNG: Two identical 4 twins, and you ask yourself if one 5 twin has autism, what's the 6 probability that the other twin 7 has autism? If this were genetic, 8 if it were entirely genetic, what 9 would you think that answer should 10 be --</p> <p>11 MS. BROWN: We just watched 12 this one.</p> <p>13 THE WITNESS: Same clip.</p> <p>14 DR. CHUNG: 100 percent. 15 Absolutely. Is that number 100 16 percent? Absolutely not. 77 17 percent. Some people have 18 estimated 80 percent. But -- 19 (Video playback stopped.)</p> <p>20 MR. WATTS: Stop. Had a 21 glitch. Sorry. 22 548, please. 23 (Document marked for 24 identification as Exhibit</p>

Page 278

1 Kolevzon 548.)
 2 (Video played.)
 3 DR. CHUNG: The bottom line
 4 is, for any one person that I see
 5 in terms of identifying a cause, I
 6 can come up with the answer these
 7 days about 20 percent of the time.
 8 That's the good news/bad news.
 9 So you can now -- that's the
 10 take-home message. You can go
 11 home now if you're bored.
 12 So with that, though, that
 13 means 80 percent of the time we
 14 have not yet figured this out.
 15 It's not all about the genes, but
 16 for the majority of individuals
 17 where we can pin it down to one
 18 thing, it is in the genes.
 19 But we know there are other
 20 factors from epidemiological
 21 studies, which I won't have time
 22 to talk about. We do know that
 23 there are infections during
 24 pregnancy. We know there are

Page 279

1 infections in early childhood that
 2 can cause this. Whether it's the
 3 virus itself, or whatever might be
 4 infected; whether it's some of the
 5 inflammatory response or what we
 6 do to fight the infection. It
 7 could be some of both.
 8 There may be things in our
 9 environment, so things that we're
 10 exposed to. Things like
 11 pollutants, chemicals, things that
 12 are changing in that.
 13 But we don't know all the
 14 answers, is the bottom line.
 15 (Video playback ended.)
 16 BY MR. WATTS:
 17 Q. Do you agree with what she
 18 says?
 19 A. You need to be more
 20 specific.
 21 Q. Okay. Things like
 22 environmental pollutants. Do you agree
 23 with her?
 24 A. I don't think it's been

Page 280

1 established that environmental pollutants
 2 are a cause of autism, no.
 3 Q. Let's -- let's go to the
 4 identification of autism genes.
 5 Inherited or common variants
 6 account for 50 percent of the genetic
 7 risk. We've established that, right?
 8 A. Yes.
 9 Q. Give us examples of the
 10 common variants that have been
 11 identified.
 12 A. So off the top of my head, I
 13 don't have a lot of good examples of
 14 common variations. There's probably, you
 15 know, five or six of them. The problem
 16 is that they are common, and they have a
 17 very weak effect. And that it's only
 18 through interacting with many, many of
 19 them are you going to produce sort of a
 20 perfect storm of autism.
 21 Q. You said something I agree
 22 with, that they have a weak effect. Why
 23 is it that common variants have a weak
 24 effect, whereas de novo variants are more

Page 281

1 powerful?
 2 A. Because common variants that
 3 are inherited from parents are not having
 4 any kind of penetration. They are not
 5 creating an actual symptom. They are
 6 sort of impairing, perhaps, the way that
 7 a protein functions. But in and of
 8 itself, it is not enough to produce,
 9 like, a clinical picture.
 10 When it's inherited and then
 11 combined with many, many other common
 12 variants, that's when it occurs.
 13 Q. Okay. So a common variant
 14 by itself is weak and hard to clinically
 15 diagnose, agreed?
 16 A. In general that's the case.
 17 Q. Common variants become
 18 clinically diagnosable when they are
 19 inherited, when they are working together
 20 with other common variants?
 21 A. Yes. But even then we have
 22 not been super successful at identifying
 23 common variants.
 24 Q. And so common variants that

Page 282

1 are interacting with de novo variants,
 2 does that present, clinically, in a way
 3 that you have a more powerful or more
 4 easily diagnosable case of ASD?
 5 MS. BROWN: Objection to the
 6 form.
 7 THE WITNESS: That's sort of
 8 a hypothetical. I think when you
 9 have rare de novo variants that
 10 are highly pathogenic, and in a
 11 single gene are sufficient to
 12 cause autism, then you have common
 13 variations that require
 14 interaction with multiple other
 15 genes in order to produce a
 16 clinical picture.
 17 BY MR. WATTS:
 18 Q. Now, this is my last Chung
 19 video, I promise. Exhibit 550.
 20 (Document marked for
 21 identification as Exhibit
 22 Kolevzon 550.)
 23 MR. WATTS: This one is from
 24 April 2nd of 2021.

Page 283

1 (Video played.)
 2 DR. CHUNG: So there are two
 3 distinctly different -- when I
 4 think of genetics of autism, there
 5 are sort of two different buckets
 6 that I think of. So within -- and
 7 let me try and point this out.
 8 So we return about -- to
 9 about 10 percent of SPARK families
 10 currently, about 10 percent of you
 11 have a genetic finding that we see
 12 that we're very certain is the --
 13 a major contributor to the autism
 14 in your family. And so we return
 15 that information to you.
 16 For most of the individuals,
 17 not all, but most of the
 18 individuals that we currently
 19 recognize that in, those are
 20 genetic changes that are de novo,
 21 or new, in the individual with
 22 autism.
 23 And so what I mean by that
 24 is it's not something that's in

Page 284

1 the mother's sample that was sent
 2 in, it's not something in the
 3 father's sample that was sent in
 4 that we see, then it seems to have
 5 started first with the individual
 6 with autism.
 7 So that's genetic, but it
 8 was not inherited.
 9 So it didn't come down from
 10 mom or dad. But it is genetic in
 11 the individual with autism.
 12 (Video playback ended.)
 13 BY MR. WATTS:
 14 Q. Do you agree with that?
 15 A. Yes.
 16 Q. Okay.
 17 A. It's still different than
 18 the heritability, though.
 19 Q. Well, she says it's genetic
 20 but not inherited. That's what she said,
 21 right?
 22 A. It wasn't passed from the
 23 parent to the child, but it occurred in
 24 the parents's gamete, the sperm or the

Page 285

1 egg.
 2 Q. Now, on Page 23,
 3 Paragraph 51, of your report, Exhibit
 4 403, you say, "Rare genetic variants are
 5 often de novo (i.e., not inherited from
 6 the mother or the father), highly
 7 penetrant (i.e., expressing associated
 8 trait), and considered to be causal to
 9 autism spectrum disorder," right?
 10 A. That's correct.
 11 Q. Okay. And then one last
 12 thing with respect to Chung, PowerPoint
 13 Exhibit 568, on April 25, 2023, Slide 29.
 14 She says, "De novo variants
 15 have a strong effect on the presence of
 16 autism." Whereas "common/mild effect
 17 variants have milder effects."
 18 Do you agree with that?
 19 A. It depends, but, in general,
 20 that's a true statement.
 21 Q. Do you know why it's true?
 22 A. I think we've gone over
 23 this.
 24 Q. And why is it true again?

Page 286

1 A. So common variations by
2 themselves don't produce clinical
3 effects, and only when they are
4 interacting with many other common
5 variations do you actually see, like, a
6 threshold met, essentially.

7 Q. Okay.

8 A. And they're -- they are
9 common.

10 Q. Okay. And they are common,
11 and there's five or six of them, and you
12 just can't name any of them today?

13 A. No. There's hundreds, if
14 not thousands of them.

15 Q. I'm talking about common
16 variants.

17 A. There's hundreds --

18 Q. You said -- you said three
19 minutes ago there were five or six of
20 them.

21 A. No. What I said is there
22 are five or six that have been reliably
23 identified as of yet, based on the
24 current state of science. But there are

Page 287

1 likely hundreds, if not thousands, of
2 common variants that contribute to
3 autism.

4 Q. Okay. As to the ones that
5 we've identified, five or six, can you
6 list any of them?

7 A. Not off the top of my head,
8 no.

9 Q. Not one?

10 A. No, I don't...

11 Q. Okay. Now, let's talk about
12 the last 15 years of science.

13 Back in 2007, in
14 Exhibit 414, you said, "To date there are
15 no known genes for autism."

16 A. Sorry. Can you -- where are
17 we?

18 Q. Yeah. Exhibit 414, Page
19 331. And I'm talking about the time
20 between then and now. And I understand
21 why, I just wanted to start with a
22 baseline.

23 Do you see that statement on
24 your paper in 2007, "There are no known

Page 288

1 genes for autism"?

2 A. No.

3 Q. Look at the screen.

4 MS. BROWN: Where is it in
5 the article?

6 THE WITNESS: What page are
7 we on?

8 MR. WATTS: We're on 44 --

9 MS. BROWN: Conclusions.

10 MR. WATTS: We're on
11 Page 331.

12 THE WITNESS: 331.

13 BY MR. WATTS:

14 Q. "To date, there are no known
15 genes for autism."

16 Do you see that?

17 A. Yeah. Even in 2014, I would
18 disagree with that statement.

19 Q. Okay. But this is in 2007.

20 A. Fragile X.

21 Q. Okay. Now, let's go forward
22 in time. In 2011, in your first edition
23 of the Hollander book, Exhibit 422,
24 Page 244.

Page 289

1 MS. BROWN: This one.

2 THE WITNESS: 442? Sorry.
3 442?

4 BY MR. WATTS:

5 Q. Yep.

6 No. Exhibit 422, Page 244,
7 and there it is on the screen.

8 You say, again, in 2011,
9 "Because currently there are no known" --
10 "there are no established risk genes for
11 autism."

12 Do you see that?

13 A. Yeah. I see that on the
14 page, yeah.

15 Q. Okay. And then in 2013, if
16 we can go to Exhibit 430.

17 (Document marked for
18 identification as Exhibit
19 Kolevzon 430.)

20 BY MR. WATTS:

21 Q. In the book, Neurobiology of
22 Mental Illness, Fourth Edition, edited by
23 Charney, published in 2013, you were the
24 first author in a book chapter, 77?

<p style="text-align: right;">Page 290</p> <p>1 A. Yep.</p> <p>2 Q. Entitled "Autism Spectrum</p> <p>3 Disorders"?</p> <p>4 A. Yes.</p> <p>5 Q. And if we go to Page 1027 of</p> <p>6 that. The upper right-hand corner.</p> <p>7 The bottom of the last</p> <p>8 sentence in the upper right-hand corner,</p> <p>9 it says, "One important conclusion from</p> <p>10 the empirical and theoretical data is</p> <p>11 that many, and even most, of the</p> <p>12 candidate gene association studies</p> <p>13 published in autism spectrum disorder are</p> <p>14 very likely false-positive findings."</p> <p>15 A. Mm-hmm.</p> <p>16 Q. If you could, explain why</p> <p>17 that's true.</p> <p>18 A. So I think that when you</p> <p>19 look at, like, these snips that are</p> <p>20 common and have weak effects, and you use</p> <p>21 things like linkage disequilibrium</p> <p>22 studies and see that they are more</p> <p>23 prominent in people with autism, they</p> <p>24 don't hold up in larger datasets. So you</p>	<p style="text-align: right;">Page 292</p> <p>1 better, called exome sequencing, right?</p> <p>2 A. Right.</p> <p>3 Q. And beginning around 2013,</p> <p>4 that would be kind of the next generation</p> <p>5 of higher resolution testing, right?</p> <p>6 A. Yes.</p> <p>7 Q. And that got the technology</p> <p>8 even better, where you can see more than</p> <p>9 you could with just microosomal arrays,</p> <p>10 right?</p> <p>11 A. Generally that's true.</p> <p>12 Q. Okay. We've got other</p> <p>13 techniques since then. I mean, in the</p> <p>14 earlier says you had karyotyping, right?</p> <p>15 A. True.</p> <p>16 Q. Then you had high-resolution</p> <p>17 karyotyping, right? Yes?</p> <p>18 A. Yes.</p> <p>19 Q. And then you had something</p> <p>20 called FISH, fluorescent in situ</p> <p>21 hybridization.</p> <p>22 A. Yes.</p> <p>23 Q. And then you had the</p> <p>24 chromosomal microwave beginning about</p>
<p style="text-align: right;">Page 291</p> <p>1 just get spurious effects.</p> <p>2 Q. Okay.</p> <p>3 A. Which is totally in contrast</p> <p>4 with the rare variants.</p> <p>5 Q. Now, since 2007, the</p> <p>6 technology available to you to be able to</p> <p>7 look into the DNA and the gene expression</p> <p>8 has exponentially improved, agreed?</p> <p>9 A. The technology and the</p> <p>10 analytic methods, yes.</p> <p>11 Q. Okay. So let's talk about</p> <p>12 the technology first.</p> <p>13 Since about 2007 you all</p> <p>14 have used chromosomal microarrays,</p> <p>15 correct?</p> <p>16 A. Yes.</p> <p>17 Q. And that allowed you to see</p> <p>18 the deletion or the duplication or the</p> <p>19 reordering of genetic code, right?</p> <p>20 A. So, yeah, to a certain</p> <p>21 extent of resolution, depending on how</p> <p>22 many probes, yes, that's basically true.</p> <p>23 Q. Okay. And in about</p> <p>24 2013-'14, you've got something even</p>	<p style="text-align: right;">Page 293</p> <p>1 2007?</p> <p>2 A. Yes.</p> <p>3 Q. And then now we have</p> <p>4 something called WES, what is that?</p> <p>5 A. Whole exome sequencing.</p> <p>6 Q. Okay. And even today, with</p> <p>7 all that technology, each of these rare</p> <p>8 variants account for only about 1 percent</p> <p>9 of autism or less, right?</p> <p>10 A. So given rare variant,</p> <p>11 probably only accounts for 1 to 2 percent</p> <p>12 in a given case.</p> <p>13 Q. Okay.</p> <p>14 A. When you add up all the rare</p> <p>15 variants, it accounts for much more.</p> <p>16 Q. Okay. Let's talk about</p> <p>17 Exhibit 522. This is a video that you</p> <p>18 gave. It's on YouTube, and I will tell</p> <p>19 you it's undated. I couldn't find the</p> <p>20 date.</p> <p>21 But let me just play it and</p> <p>22 ask whether you still agree with it.</p> <p>23 Maybe you can tell me when it was.</p> <p>24 (Document marked for</p>

<p style="text-align: right;">Page 294</p> <p>1 identification as Exhibit 2 Kolevzon 522.) 3 (Video played.) 4 "DR. KOLEVZON: To date all 5 the genetic defects reliably 6 identified to cause autism are 7 rare variants, each accounting for 8 only about 1 percent of autism or 9 less. 10 However, when these rare 11 genetic defects are present, they 12 are always associated with 13 clinical symptoms, which more 14 often than not include autism." 15 (Video playback ended.) 16 BY MR. WATTS: 17 Q. Okay. So is that still true 18 today, that even the most common rare 19 variant is about 1 percent of the total 20 risk for autism? 21 A. So 1 to 2 percent. That's 22 probably true. 23 Q. Okay. Let's talk about some 24 of the more spoken of rare variants.</p>	<p style="text-align: right;">Page 296</p> <p>1 MR. WATTS: That's a great 2 example. 3 BY MR. WATTS: 4 Q. Keep going. 5 A. Fragile X syndrome is 6 essentially inherited from mothers. 7 Q. Have you looked at any 8 epidemiological work on fragile X 9 syndrome? 10 A. I did not investigate that 11 specific question today. 12 Q. Let me put up Exhibit 547, 13 just to give you an example. One of 14 many. 15 (Document marked for 16 identification as Exhibit 17 Kolevzon 547.) 18 BY MR. WATTS: 19 Q. There's a lot of work's been 20 done on what causes fragile X syndrome? 21 A. Well, it's CGG repeats, 22 inherited from a parent. 23 Q. And let -- let's use -- 24 MR. WATTS: Objection.</p>
<p style="text-align: right;">Page 295</p> <p>1 Fragile X syndrome is a rare 2 variant, right? 3 A. Right. 4 Q. It's caused by mutations in 5 the FMR1 gene that results in the loss of 6 the FMR protein, which is critical for 7 brain development, right? 8 A. Yes. 9 Q. You have testified that it's 10 the most commonly known rare variant 11 cause of autism spectrum disorder, right? 12 A. I think that that was 13 probably old testimony. 14 Q. Okay. 15 A. But it's certainly among the 16 most commonly known. 17 Q. Now let's take fragile X 18 syndrome and call it our broken leg. 19 Do you know what the 20 epidemiological research has demonstrated 21 causes fragile X syndrome? 22 MS. BROWN: I'm just going 23 to object to the hypothetical 24 about the leg.</p>	<p style="text-align: right;">Page 297</p> <p>1 Nonresponsive. 2 MS. BROWN: Object. 3 I don't have 547, I don't 4 think. Oh, wait. 5 MR. WATTS: I'm pretty sure 6 you do. It's got my handwriting 7 on it, on the back. 8 MS. BROWN: Well, we go from 9 546 to 548. Let me try the other 10 box. 11 MR. WATTS: Here, take mine. 12 Give it back, though. 13 MS. BROWN: Oh, hold on. 14 546 is 547. Got it. 15 MR. WATTS: We're good. 16 MS. BROWN: We got it. 17 BY MR. WATTS: 18 Q. Okay. This is a study by 19 Saldarriaga. "Increased severity of 20 fragile X spectrum disorders in the 21 agricultural community of Ricaurte, 22 Columbia." 23 A. Hold on. Let me just read 24 it for a second.</p>

<p>Page 298</p> <p>1 Q. Do you see in the abstract 2 they said, "We found an increased 3 frequency and severity of symptoms of 4 fragile X spectrum disorders, which might 5 be related to the vulnerability of the 6 FMR1 premutation carriers to higher 7 exposure to neurotoxic pesticides in this 8 rural community"?</p> <p>9 MS. BROWN: Object as 10 lacking foundation.</p> <p>11 THE WITNESS: So these 12 are -- these are not people with 13 fragile X syndrome. These are 14 premutation carriers. These are 15 the parents that when you pass on, 16 it becomes a full mutation.</p> <p>17 BY MR. WATTS: 18 Q. Did you cite -- I'm sorry. 19 A. And then you have fragile X 20 syndrome. 21 Q. Did you cite to any studies 22 that analyze whether the prevalence of 23 fragile X syndrome was higher in areas 24 with pesticide exposure than not?</p>	<p>Page 300</p> <p>1 THE WITNESS: So I have not. 2 BY MR. WATTS: 3 Q. Okay. 4 A. But this -- this particular 5 study doesn't necessarily suggest that. 6 Q. Let's go to a different one, 7 Phelan-McDermid syndrome. You've studied 8 that in SHANK3 mice a lot, right? 9 A. I've spent a lot of time 10 studying Phelan-McDermid syndrome, yes. 11 Q. You began studying in about 12 2009? 13 A. Sounds about right. 14 Q. You've looked at different 15 pathway activity, hoping to either 16 inhibit or decrease the activation so you 17 can have an effect on the phenotype, 18 right? 19 A. I collaborate with people 20 that do that on the preclinical trial, 21 and I do clinical trials in kids, yes. 22 Q. And you use SHANK3. You are 23 using mice, right? 24 A. I don't work with mice</p>
<p>Page 299</p> <p>1 MS. BROWN: Objection. 2 Assumes facts. Lacks foundation. 3 THE WITNESS: My task here 4 was to evaluate the relationship 5 between acetaminophen used during 6 pregnancy and autism, not fragile 7 X syndrome. 8 BY MR. WATTS: 9 Q. Yeah, but you said it was 10 genetic, not environmental. Have you 11 looked at anything to say whether it's 12 environmental or not? 13 MS. BROWN: Object to the 14 form of the question. 15 THE WITNESS: Can you repeat 16 the question? 17 BY MR. WATTS: 18 Q. Have you looked at any 19 studies that have analyzed whether the 20 prevalence of fragile X syndrome is based 21 on exposure to things like pesticides or 22 other environmental toxicants? 23 MS. BROWN: Objection to the 24 form.</p>	<p>Page 301</p> <p>1 myself. I collaborate with basic 2 scientists who do. 3 Q. Yeah. Let me show a video, 4 Exhibit 472, just as an example. 5 (Document marked for 6 identification as Exhibit 7 Kolevzon 472.) 8 (Video played.) 9 DR. KOLEVZON: You can 10 actually stimulate mice with 11 the missing copies of the SHANK3 12 gene in this case where you 13 basically ring, like, a very loud 14 bell and you can induce a seizure. 15 These are called audiogenic 16 seizures. And, remarkably, all of 17 these phenotypes were rescued 18 under the influence of this drug 19 AMO-1. 20 Okay. And so for us, that 21 was, like, you know, kind of an 22 important sort of proof of 23 concept, that there could be some 24 real relevance to some kids with</p>

<p style="text-align: right;">Page 302</p> <p>1 Phelan-McDermid syndrome. 2 (Video playback ended.) 3 BY MR. WATTS: 4 Q. That's your voice, right? 5 A. Yeah. 6 Q. Okay. Phelan-McDermid 7 syndrome also goes by SHANK3 deletion 8 syndrome, right? It's the same thing? 9 A. It's -- they're -- yeah. I 10 mean, it's complicated. But sort of. 11 Q. If you want to get really in 12 the weeds, it's the 22q13.3 deletion 13 syndrome? 14 A. You can have any deficiency, 15 or what's called haploinsufficiency of 16 SHANK3, gives you the diagnosis of 17 Phelan-McDermid syndrome. That can be 18 through deletions, or it can be through 19 single base para-sequence variants. 20 Q. Sure. But it's all about a 21 loss of a small piece of what, 22 Chromosome 22? 23 A. Small or large, yeah. 24 Q. Okay. And Phelan-McDermid</p>	<p style="text-align: right;">Page 304</p> <p>1 interested in any studies that you 2 have to show me that the 3 prevalence of Phelan-McDermid 4 syndrome increases with 5 environmental exposures. 6 BY MR. WATTS: 7 Q. I know you desire that. I'm 8 asking, before you showed up here, have 9 you bothered to look? 10 MS. BROWN: Well, that's 11 argumentative. He answered your 12 question, and he'll answer it 13 again. 14 Go ahead, Doctor. 15 THE WITNESS: I've looked at 16 every paper that has ever come out 17 with Phelan-McDermid syndrome as 18 it relates to clinical features. 19 It's possible -- 20 BY MR. WATTS: 21 Q. What about etiology? 22 MS. BROWN: Let him finish. 23 THE WITNESS: Also, the 24 etiology of Phelan-McDermid</p>
<p style="text-align: right;">Page 303</p> <p>1 or SHANK3 is about one-half to 1 percent 2 of the rare variant autism cases, right? 3 A. Probably up to 2 percent 4 when you include intellectual disability, 5 but yes. 6 Q. And have you read any 7 studies with respect to the relationship 8 between environmental exposures and the 9 prevalence of Phelan-McDermid syndrome? 10 MS. BROWN: Objection. 11 Assumes facts. Lacks foundation. 12 THE WITNESS: So I'd be 13 interested in studies that you 14 have to show me if I haven't read 15 them. 16 But the Phelan-McDermid 17 syndrome is a de novo spontaneous 18 mutation that occurs at the time 19 of conception. 20 BY MR. WATTS: 21 Q. What was the answer to my 22 question? 23 MS. BROWN: He answered it. 24 THE WITNESS: I said I'd be</p>	<p style="text-align: right;">Page 305</p> <p>1 syndrome is SHANK3 2 haploinsufficiency. 3 BY MR. WATTS: 4 Q. Broken leg? 5 A. Excuse me? Broken leg? 6 Q. We've got a fractured femur 7 that caused the broken leg again. 8 MS. BROWN: Again with the 9 leg. I'm going to continue to 10 object to the leg. 11 THE WITNESS: So -- yeah, 12 the leg is an interesting analogy. 13 I mean, let's think about the leg 14 for a second. 15 If you have Phelan-McDermid 16 syndrome -- and I'll pull your 17 analogies together just for fun. 18 BY MR. WATTS: 19 Q. Cool. 20 A. And you are more prone to 21 hyperflexibility, and you find yourselves 22 in situations where you may have a 23 fracture because you have fallen, because 24 you've got motor skill deficits. And so</p>

<p style="text-align: right;">Page 306</p> <p>1 in that case, it's not the bat, it's the</p> <p>2 Phelan-McDermid syndrome that caused the</p> <p>3 fracture.</p> <p>4 Q. Let's look at 546, a paper</p> <p>5 by Boccuto.</p> <p>6 A. Boccuto?</p> <p>7 (Document marked for</p> <p>8 identification as Exhibit</p> <p>9 Kolevzon 546.)</p> <p>10 BY MR. WATTS:</p> <p>11 Q. Yeah. Are you ready?</p> <p>12 A. Yes.</p> <p>13 Q. "Phenotypic Variability in</p> <p>14 Phelan-McDermid Syndrome and Its Putative</p> <p>15 Link to Environmental Factors."</p> <p>16 Have you seen this before?</p> <p>17 A. Yes.</p> <p>18 Q. Was it listed in your</p> <p>19 materials considered in this case?</p> <p>20 A. I don't know if it was or</p> <p>21 wasn't.</p> <p>22 Q. Okay. If we could go to</p> <p>23 Table 1, it's got "Possible contributions</p> <p>24 of environmental factors to</p>	<p style="text-align: right;">Page 308</p> <p>1 established. It's due to SHANK3</p> <p>2 haploinsufficiency.</p> <p>3 Q. Broken leg.</p> <p>4 MS. BROWN: Again, with the</p> <p>5 broken leg. I'm going to object.</p> <p>6 BY MR. WATTS:</p> <p>7 Q. Go ahead.</p> <p>8 A. And my role is always to try</p> <p>9 to develop ways to support or treat</p> <p>10 children.</p> <p>11 Q. Okay. Let me give you some</p> <p>12 kudos and play Exhibit 469 for a second.</p> <p>13 It's one of your videos, and I just want</p> <p>14 to put it in the record.</p> <p>15 MS. BROWN: Can you give us</p> <p>16 the date.</p> <p>17 MR. WATTS: February 28,</p> <p>18 2018.</p> <p>19 (Document marked for</p> <p>20 identification as Exhibit</p> <p>21 Kolevzon 469.)</p> <p>22 (Video played.)</p> <p>23 DR. KOLEVZON: We create</p> <p>24 different kinds of model systems,</p>
<p style="text-align: right;">Page 307</p> <p>1 Phelan-Mcdermid syndrome clinical</p> <p>2 presentation."</p> <p>3 And it lists different</p> <p>4 environmental factors, including drugs</p> <p>5 and inflammations -- inflammation, and</p> <p>6 the like, right?</p> <p>7 A. Yes.</p> <p>8 Q. Okay. And it's got a bunch</p> <p>9 of references that talk about those</p> <p>10 contributions of environmental factors to</p> <p>11 Phelan-McDermid syndrome, right?</p> <p>12 A. Yes.</p> <p>13 Q. Okay. Doctor, with respect</p> <p>14 to your work with SHANK3 mice, are you</p> <p>15 doing work with respect to etiology or</p> <p>16 cause of the syndrome as opposed to treat</p> <p>17 it, in fairness to you?</p> <p>18 A. So by point of</p> <p>19 clarification, I don't work with the</p> <p>20 mice. I collaborate with people who work</p> <p>21 with mice.</p> <p>22 Q. Fair enough.</p> <p>23 A. The etiology of</p> <p>24 Phelan-McDermid syndrome has been</p>	<p style="text-align: right;">Page 309</p> <p>1 whether it's mice models or rat</p> <p>2 models or even now, neurons</p> <p>3 derived from humans, and using</p> <p>4 iPSCs, or pluripotent stem cells,</p> <p>5 as it's called.</p> <p>6 We use those models to</p> <p>7 really better understand the</p> <p>8 pathophysiology, and in this case,</p> <p>9 what's going wrong in terms of the</p> <p>10 nerve cell connections when SHANK3</p> <p>11 is -- when there's loss of</p> <p>12 function of SHANK3.</p> <p>13 Then we can test specific</p> <p>14 medicines in the models. And then</p> <p>15 if those medicines work at</p> <p>16 reversing either the behavior of</p> <p>17 the models or the way the nerve</p> <p>18 cells connect, for example, then</p> <p>19 we bring those medicines to</p> <p>20 clinical trials in kids.</p> <p>21 And that's the pathway that</p> <p>22 we've been following.</p> <p>23 (Video playback ended.)</p> <p>24 BY MR. WATTS:</p>

<p style="text-align: right;">Page 310</p> <p>1 Q. Is that one of the videos 2 you did?</p> <p>3 A. Yes.</p> <p>4 Q. Okay. So you're working 5 with people who are using the SHANK3 mice 6 to help try to come up with a clinical 7 treatment for Phelan-McDermid syndrome?</p> <p>8 A. Yes. If you fast-forward to 9 the end of the presentation, you'll see 10 the acknowledgments, which includes the 11 whole team.</p> <p>12 Q. Yep. Okay. Let's go to 13 IGF-1. That's insulin-like growth 14 factor 1, right?</p> <p>15 A. Yes.</p> <p>16 Q. It's a hormone that's 17 similar in molecular structure to 18 insulin, right?</p> <p>19 A. Similar, yeah.</p> <p>20 Q. It's produced primarily by 21 the liver?</p> <p>22 A. Correct.</p> <p>23 Q. It's characterized by the 24 association of intrauterine growth</p>	<p style="text-align: right;">Page 312</p> <p>1 for. I was using it for Phelan-McDermid 2 syndrome.</p> <p>3 And I'm using it to take 4 advantage of the mechanism which is to 5 produce growth.</p> <p>6 Q. I understand. But my 7 question is, is placental dysfunction a 8 cause of IGF-1 deficiency?</p> <p>9 A. I'm not an expert in IGF-1 10 deficiency.</p> <p>11 Q. Okay. During gestation, a 12 placenta is one of the major sources of 13 IGF-1, right?</p> <p>14 MS. BROWN: Object to the 15 form.</p> <p>16 THE WITNESS: I'm not an 17 expert in IGF-1 deficiency. 18 BY MR. WATTS:</p> <p>19 Q. Okay. Does DNA methylation 20 play a critical role in placental 21 development?</p> <p>22 A. I'm not an expert in 23 placental development or IGF-1 24 deficiency.</p>
<p style="text-align: right;">Page 311</p> <p>1 retardation with intellectual deficit, 2 right?</p> <p>3 A. Sorry, can you repeat that?</p> <p>4 Q. It's characterized by the 5 association of intrauterine growth 6 retardation with intellectual deficit?</p> <p>7 A. That's taken out of context. 8 It is a growth factor that's critical for 9 brain development.</p> <p>10 Q. Okay. It's caused by a 11 deregulated lipid metabolism?</p> <p>12 A. What's caused by a 13 deregulated lipid metabolism?</p> <p>14 Q. IGF-1 syndrome?</p> <p>15 A. Ah. You are talking about a 16 short stature syndrome.</p> <p>17 Q. Is that right?</p> <p>18 A. So there is a syndrome 19 that's characterized by IGF-1 deficiency.</p> <p>20 Q. And is placental dysfunction 21 a cause of IGF-1 deficiency?</p> <p>22 A. So we're talking about an 23 indication for IGF-1 as a compound. 24 That's not at all what I was using it</p>	<p style="text-align: right;">Page 313</p> <p>1 Q. So I won't be hearing you 2 talk about any of those issues at trial?</p> <p>3 A. I mean, depends on what I'm 4 asked about IGF-1.</p> <p>5 Q. Well, I just asked you. So 6 do you have any answers?</p> <p>7 MS. BROWN: Well --</p> <p>8 THE WITNESS: I will not be 9 providing any testimony about 10 placental insufficiency or IGF-1 11 deficiency.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Let's talk about Angelman 14 syndrome. Do you know what that is?</p> <p>15 A. I do.</p> <p>16 Q. Ubiquitin protein ligase 17 E3A, right?</p> <p>18 A. That's correct. I'm not an 19 expert in Angelman syndrome --</p> <p>20 Q. Do you know what causes it?</p> <p>21 A. I do know what causes it. 22 I'm not an expert in this area.</p> <p>23 Q. What about 15q duplications?</p> <p>24 A. I'm also aware of 15q</p>

Page 314

1 duplication. I'm not an expert in this
2 area.
3 Q. Okay. Are you an expert in
4 the etiology of that?
5 A. I'm not an expert in the
6 area of 15q duplications.
7 Q. Do you know enough about it
8 to know that the EEG signature is almost
9 identical to the beta oscillations
10 induced by benzodiazapine drugs?
11 MS. BROWN: I object as
12 lacking foundation.
13 THE WITNESS: I know that
14 there are EEG signatures that are
15 different than typically
16 developing controls in both
17 Angelman syndrome and 15q11
18 duplication syndrome.
19 BY MR. WATTS:
20 Q. Okay. Do you know that the
21 beta oscillations are similar or almost
22 identical to those induced by
23 benzodiazapine drugs?
24 MS. BROWN: Lacks

Page 315

1 foundation. I object.
2 THE WITNESS: I was not
3 investigating that specific
4 question when I came here.
5 BY MR. WATTS:
6 Q. Okay. Rett syndrome, are
7 you familiar with that?
8 A. I am.
9 Q. It's not an inherited
10 disorder, is it?
11 A. It's a spontaneous de novo
12 mutation that's considered to be within
13 the heritability domain. So it's
14 genetic.
15 Q. But not inherited?
16 A. Parents do not pass on Rett
17 syndrome to their children, but...
18 Q. And Rett syndrome results in
19 problems with protein production critical
20 to brain development, right?
21 A. Yes.
22 Q. Williams syndrome, do you
23 know what that is?
24 A. I'm familiar with Williams

Page 316

1 syndrome, yes.
2 Q. It's most often not
3 inherited, right?
4 A. I'm not sure if that's
5 correct, no.
6 Q. No? It results from not
7 having a copy of the 25 to 27 genes on
8 Chromosome Number 7, right?
9 A. Right. So, again, inherited
10 versus sort of heritable. It's still
11 embedded within the genetics.
12 Q. I'm not saying it's not in
13 the genetics.
14 A. Right.
15 Q. But it's not heritable from
16 the parents.
17 A. It's not inherited from the
18 parents.
19 Q. In other words, if you have
20 a kid that presents with the rare
21 mutation, Williams syndrome --
22 A. The parent did not have it.
23 Q. There you go. Okay.
24 Prader-Willi syndrome. You

Page 317

1 familiar with it?
2 A. Yeah, same.
3 Q. Not genetic or -- strike
4 that.
5 Not heritable, right?
6 A. Entirely, wholly genetic.
7 Q. I know. And I said it
8 wrong.
9 My question is, it's not
10 heritable, right?
11 A. It is heritable.
12 Q. Okay.
13 A. It is not inherited.
14 Q. There you go.
15 And that's an unstable
16 region that's on Chromosome 15, right?
17 A. 15, yes.
18 Q. Okay. Smith-Magenis
19 syndrome?
20 A. I've seen one case with
21 Smith-Magenis syndrome.
22 Q. And it was not inherited,
23 was it?
24 A. It's not inherited. It is

Page 318

1 still genetic.

2 Q. Okay. I mean, all of these

3 are genetic mutations and, therefore,

4 genetic, right?

5 A. Correct, just like autism.

6 Q. Yeah. It's just different

7 kinds of a fractured femur that are --

8 they are all a broken leg?

9 MS. BROWN: Objection to the

10 form of the question.

11 BY MR. WATTS:

12 Q. All right. Let's get --

13 let's get back to the details.

14 DiGeorge syndrome?

15 A. Yes.

16 Q. That's 22q11.2 deletion

17 syndrome?

18 A. Yes.

19 Q. 90 percent of those cases

20 are not heritable?

21 A. Again, heritable to me means

22 the percentage of the phenotype that's

23 explained by genetics, in which case

24 22q13 deletion -- 22q11 deletion system

Page 319

1 is heritable. It is genetic in origin.

2 The parents don't also have

3 it and, therefore, pass it on to their

4 kids. But it is heritable, and it is

5 genetic.

6 Q. It's not passed along by the

7 parents?

8 A. Correct.

9 Q. Okay. So far, you've

10 identified about 250 rare genes, you

11 said?

12 A. So I think the field as a

13 whole is about at, yeah, somewhere around

14 250 genes.

15 Q. Okay. The lion's share of

16 those are not heritable, in that you

17 don't see them in the parents as well,

18 right?

19 A. Those are mainly de novo

20 mutations that occur when sperm meets

21 egg, so they are carried, but they are

22 within the gamete.

23 Q. And each of those 250 rare

24 genetic mutations could have an

Page 320

1 environmental etiology if the child is

2 genetically predisposed, right?

3 MS. BROWN: Objection.

4 Improper hypothetical. Calls for

5 speculation.

6 THE WITNESS: I'm not sure I

7 understand the question.

8 BY MR. WATTS:

9 Q. Okay. When you say that

10 we've gone from zero to 100 rare variants

11 to 250, and we expect to get to 500 to a

12 thousand, those are just different

13 examples of different kinds of gene

14 mutations that you're able to see through

15 the technology that we've identified,

16 right?

17 A. I think it's a combination

18 of the technology being better

19 resolution, and also a combination of the

20 analytics methods improving.

21 Q. Now, in -- did you write a

22 paper in 2017 with the scientist known as

23 Angarita?

24 A. Yes.

Page 321

1 Q. Let me put this up real

2 quick. Exhibit 453.

3 (Document marked for

4 identification as Exhibit

5 Kolevzon 453.)

6 BY MR. WATTS:

7 Q. And a statement you make on

8 Page 227.

9 A. Oh, that's the one that I

10 didn't recognize.

11 TRIAL TECH: 227?

12 MR. WATTS: 226. I'm sorry.

13 BY MR. WATTS:

14 Q. Under "Pathophysiology," did

15 you write that, "10 to 15 percent of the

16 autism spectrum disorder is caused by

17 rare genetic variants"?

18 A. At the time that may have

19 been correct.

20 Q. Okay.

21 I'm going to be a liar. I

22 have one more Chung video I want to ask

23 you about. I'm sorry. I thought I was

24 done. Exhibit 548. And we may have

Page 322

1 already played it.
 2 Do you remember when she
 3 said that genes only explain 20 percent
 4 of the cases?
 5 MS. BROWN: Objection.
 6 Misstates testimony.
 7 THE WITNESS: No.
 8 MR. WATTS: Play -- play it
 9 again. It's on December 26, 2018.
 10 (Video played.)
 11 DR. CHUNG: The bottom line
 12 is, for any one person that I see
 13 in terms of identifying a cause, I
 14 can come up with the answer these
 15 days about 20 percent of the time.
 16 That's the good news/bad news.
 17 (Video playback ended.)
 18 MR. WATTS: Stop there.
 19 THE WITNESS: So that's not
 20 what she said.
 21 BY MR. WATTS:
 22 Q. Okay. Tell me what she had
 23 meant -- I'm clearly ships passing in the
 24 light, and I'm not trying to be -- tell

Page 323

1 me what she said.
 2 A. Yeah. So what she says is
 3 that when she sees 100 kids in her
 4 clinic, she does genetic testing on all
 5 of them. They all have autism, but only
 6 20 percent of the genetic tests comes
 7 back with a specific genetic cause.
 8 Q. Okay. I'll take it --
 9 A. It's the yield of the
 10 genetic testing.
 11 Q. And -- and then let's go
 12 back to 4 -- 568 for a second. It's the
 13 PowerPoint.
 14 And if you can go to
 15 Slide 10. This is dated April 25th.
 16 See how she says, "Genetic
 17 diagnoses in 8 to 10 percent of the
 18 families"?
 19 A. Yeah.
 20 Q. Okay. Is that consistent
 21 with your experience?
 22 MS. BROWN: Objection to
 23 form.
 24 THE WITNESS: So, you know,

Page 324

1 this depends entirely on when this
 2 slide was done versus when the
 3 video was done versus what the
 4 technology's being used.
 5 BY MR. WATTS:
 6 Q. Okay. This is why I'm
 7 asking both of them. The video that we
 8 just watched saying 20 percent was in
 9 December of 2018. This is in a slideshow
 10 that's dated April 25th of 2023.
 11 A. So I --
 12 MS. BROWN: I object. Lacks
 13 foundation.
 14 THE WITNESS: I don't
 15 understand the context of this
 16 slide and what exactly she's
 17 referring to, what her sample is.
 18 BY MR. WATTS:
 19 Q. Okay.
 20 A. So we need to figure that
 21 out first.
 22 Q. Now, here is my question.
 23 And she -- she was at
 24 Columbia and is now in Boston, and you

Page 325

1 are at Mount Sinai.
 2 Do you have similar
 3 statistics in terms of, for every 100
 4 kids that we run genetic testing on, we
 5 only identify a genetic diagnosis 8, 10,
 6 15, 20 percent of the time?
 7 MS. BROWN: Objection to
 8 form.
 9 THE WITNESS: So the
 10 ascertainment will change the
 11 yield for sure.
 12 BY MR. WATTS:
 13 Q. Okay.
 14 A. But I can't answer the
 15 question as to whether her ascertainment
 16 is different than mine.
 17 Q. Okay. Do you know whether
 18 yours is 10 percent versus 20 percent?
 19 A. I know what it is in terms
 20 of the general field, where I think we're
 21 up to actually 30 percent. I think
 22 Dr. Chung would say 30 percent today.
 23 And I don't know what this genetic
 24 diagnosis kind of --

Page 326

1 Q. Okay.

2 A. -- cohort is referring to.

3 Oh, this could be SPARK. Is

4 this SPARK?

5 Q. I think it is.

6 A. Oh, okay. So that's a

7 different story altogether.

8 Q. Now, let's talk about

9 siblings for a second. Why is the rate

10 of autism among siblings 50 times greater

11 than in the general population?

12 MS. BROWN: Objection to

13 form. Lacks foundation.

14 THE WITNESS: Because of the

15 common variants.

16 BY MR. WATTS:

17 Q. Okay. Which is 50 percent

18 of the genetic contribution, right?

19 A. So among the genetic causes,

20 it's likely that 50 percent probably can

21 be attributed to common variants.

22 Q. Now, I've noticed that in

23 all of the autism cases where you've

24 testified, you try to get a genetic test

Page 327

1 done on the little boy or the little girl

2 that's at issue, right?

3 MS. BROWN: Objection to the

4 form.

5 THE WITNESS: I usually

6 advise that it's the standard of

7 care. But I don't necessarily

8 inform what happens in terms of

9 their case or their strategy.

10 BY MR. WATTS:

11 Q. Okay. And even when the

12 genetic testing doesn't identify a common

13 variant or a rare variant with which you

14 are familiar, you say it's not

15 environmental, it's got to be genetic,

16 right?

17 MS. BROWN: Objection.

18 Objection to form.

19 THE WITNESS: So if you want

20 to talk about specific cases, we

21 have to evaluate them

22 specifically. I can't sort of

23 talk about them en masse.

24 BY MR. WATTS:

Page 328

1 Q. Okay. Well, did the genetic

2 test on the case that you testified in

3 Houston come up negative?

4 MS. BROWN: Objection to the

5 form of the question.

6 THE WITNESS: So the

7 question, in Houston -- it wasn't

8 Houston. It was Galveston.

9 BY MR. WATTS:

10 Q. Galveston.

11 A. Galveston. Come on, guys.

12 Q. Listen, we both moved away

13 from Beaumont.

14 A. Right.

15 Q. The case that you testified

16 in 2023 in Galveston -- I said Galveston

17 first --

18 A. Yeah.

19 Q. The genetic test came up

20 negative, didn't it?

21 MS. BROWN: Objection to the

22 form.

23 THE WITNESS: The question

24 at hand for me in that case was

Page 329

1 whether or not there was a

2 likelihood that child had heavy

3 metal poisoning from baby food and

4 whether heavy metal poisoning had

5 been established as the cause of

6 autism.

7 BY MR. WATTS:

8 Q. That wasn't my question.

9 You did genetic testing on

10 that little boy and it came up negative,

11 didn't it?

12 MS. BROWN: Object to that

13 question. Lacks foundation.

14 THE WITNESS: So, I think,

15 two things. One, I didn't do any

16 genetic testing. Two, I don't

17 think the details of that

18 particular case are appropriate to

19 share.

20 BY MR. WATTS:

21 Q. Well, I'll tell you what.

22 Assuming I've got his deposition --

23 A. Mm-hmm.

24 Q. -- and assuming that I've

<p style="text-align: right;">Page 330</p> <p>1 talked to his lawyers who gave me that 2 deposition. 3 A. Mm-hmm. 4 Q. None of Ethan's genetic 5 testing showed any genetic abnormalities. 6 Isn't that true? Didn't you 7 testify to that in your deposition, or 8 your trial testimony, in that case? 9 MS. BROWN: Well, I'm going 10 to interject, though. To the 11 extent the doctor has concerns 12 that there is a protective order 13 or confidentiality, I don't want 14 him to give any testimony. 15 Whether you had a 16 conversation with your friends on 17 the plaintiffs' side or not, if he 18 feels that giving testimony about 19 someone's genetic testing would be 20 inappropriate -- 21 MR. WATTS: Yeah, if -- 22 MS. BROWN: -- we have to 23 err on the side of caution there. 24 I'm going to instruct him not to</p>	<p style="text-align: right;">Page 332</p> <p>1 in that public record, I stand by. 2 MR. WATTS: Exhibit 513. 3 Page 25. 4 (Document marked for 5 identification as Exhibit 6 Kolevzon 513.) 7 BY MR. WATTS: 8 Q. In the public transcript, in 9 the public testimony, in the public 10 record. 11 Page 25. There we go. 12 "And so what we know about 13 Ethan's genetic testing is that none of 14 the tests that he had showed any genetic 15 abnormalities, right, sir?" 16 The answer was, "Correct," 17 right? 18 A. To the extent of our 19 knowledge and to the extent of the 20 testing that was done, and where we are 21 sitting today, no identified genetic 22 abnormalities were found. 23 Q. That was the same as in the 24 Sullens case in 2018. There was no</p>
<p style="text-align: right;">Page 331</p> <p>1 answer that. 2 BY MR. WATTS: 3 Q. Let's err -- let's err on 4 the side that when you testify in a 5 trial, it's a public courtroom and it is 6 a public record, okay? So this isn't 7 something where that nonsense is going to 8 play, okay? 9 You were in trial in 10 Galveston earlier this year and testified 11 that none of Ethan's genetic testing 12 showed any genetic abnormalities, right? 13 MS. BROWN: And I'll just 14 give you the same caution. If you 15 are concerned that answering these 16 questions is revealing something 17 that was not testified to in a 18 public arena, then I don't want 19 you to answer it. 20 THE WITNESS: This is a 21 public record? 22 BY MR. WATTS: 23 Q. It is. 24 A. Then, obviously, what I said</p>	<p style="text-align: right;">Page 333</p> <p>1 genetic test done that was able to detect 2 a genetic cause for this child's autism, 3 right? 4 A. That is -- 5 MS. BROWN: I object. 6 That's inconsistent with the 7 testimony on the rest of this 8 page. 9 THE WITNESS: I don't have 10 any memory of that case. 11 MR. WATTS: Exhibit 480, 12 Page 82. 13 (Document marked for 14 identification as Exhibit 15 Kolevzon 480.) 16 BY MR. WATTS: 17 Q. Lines 19 through 21. 18 MS. BROWN: And can we take 19 a break when you get to a good 20 spot? 21 MR. WATTS: Yeah, when I get 22 done with this spot, sure. 23 BY MR. WATTS: 24 Q. You see in the Sullens</p>

<p style="text-align: right;">Page 334</p> <p>1 versus Walmart case, there was no genetic</p> <p>2 test done that was able to detect a</p> <p>3 genetic cause for this child's autism?</p> <p>4 A. So in this case -- this is</p> <p>5 also public record?</p> <p>6 MS. BROWN: I don't know.</p> <p>7 Let's look.</p> <p>8 This is a deposition. I</p> <p>9 don't know. If you have any</p> <p>10 concerns, don't testify about it.</p> <p>11 THE WITNESS: So --</p> <p>12 MS. BROWN: Do -- can you</p> <p>13 represent there is no protective</p> <p>14 order? I don't know how you got</p> <p>15 this deposition.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. Do you have an answer for my</p> <p>18 question?</p> <p>19 MS. BROWN: Well, no, but</p> <p>20 he's raised a concern, and it's a</p> <p>21 fair --</p> <p>22 MR. WATTS: Alli, you don't</p> <p>23 represent Walmart. Come on.</p> <p>24 You're just obstructing --</p>	<p style="text-align: right;">Page 336</p> <p>1 MR. WATTS: Objection.</p> <p>2 Nonresponsive.</p> <p>3 MS. BROWN: I object.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. Was there genetic test done</p> <p>6 of the Sullens kid and it didn't show a</p> <p>7 genetic cause for this child's autism?</p> <p>8 MS. BROWN: Objection to</p> <p>9 form.</p> <p>10 THE WITNESS: I don't recall</p> <p>11 the details of this case.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. What about the Huddleston</p> <p>14 case, Exhibit 526.</p> <p>15 (Document marked for</p> <p>16 identification as Exhibit</p> <p>17 Kolevzon 526.)</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Was there testing done in</p> <p>20 that case?</p> <p>21 A. I don't recall the details</p> <p>22 of that case.</p> <p>23 Q. Doctor, with respect to</p> <p>24 sibling controls, have you read the</p>
<p style="text-align: right;">Page 335</p> <p>1 MS. BROWN: No, no. But</p> <p>2 if -- if he's subject to a</p> <p>3 protective order because he gave a</p> <p>4 deposition in another case and</p> <p>5 he's raising a concern about it --</p> <p>6 MR. WATTS: I've got the</p> <p>7 deposition --</p> <p>8 MS. BROWN: -- I'm going to</p> <p>9 advise him not to testify about</p> <p>10 it.</p> <p>11 BY MR. WATTS:</p> <p>12 Q. I've got the deposition in</p> <p>13 the Sullens case. There was a genetic</p> <p>14 testing done. It showed no genetic</p> <p>15 abnormalities, again.</p> <p>16 MS. BROWN: I'm going to</p> <p>17 give you the same caution --</p> <p>18 THE WITNESS: So, yeah, I</p> <p>19 think -- if we can dig into these</p> <p>20 cases, the question at hand here</p> <p>21 was whether the so-called insult</p> <p>22 caused this child to have autism.</p> <p>23 In this case it was crystal clear</p> <p>24 that it did not.</p>	<p style="text-align: right;">Page 337</p> <p>1 Solander paper in 2016 that the bias</p> <p>2 tends to attenuate the estimated effect</p> <p>3 toward the null in some common scenarios,</p> <p>4 thus producing a conservative estimate of</p> <p>5 the true exposure effect?</p> <p>6 MS. BROWN: Objection to the</p> <p>7 form of the question.</p> <p>8 THE WITNESS: I would have</p> <p>9 to see the paper.</p> <p>10 BY MR. WATTS:</p> <p>11 Q. Sure.</p> <p>12 A. I have to see the paper.</p> <p>13 Q. Okay. Have you heard that</p> <p>14 generally, in looking at sibling control</p> <p>15 studies, that they bias towards the null?</p> <p>16 MS. BROWN: Objection to the</p> <p>17 form.</p> <p>18 THE WITNESS: I have heard</p> <p>19 people make that claim, yes.</p> <p>20 BY MR. WATTS:</p> <p>21 Q. Do you agree with it?</p> <p>22 MS. BROWN: Objection to the</p> <p>23 form. Calls for speculation.</p> <p>24 THE WITNESS: I think --</p>

Page 338

1 yeah, I think it depends on the
 2 study, it depends on the design,
 3 it depends on the rigor.
 4 BY MR. WATTS:
 5 Q. In what way is a study
 6 design with the sibling controls that
 7 will bias towards the null?
 8 MS. BROWN: Objection.
 9 Overbroad.
 10 THE WITNESS: Can you be
 11 more specific?
 12 BY MR. WATTS:
 13 Q. No. You said it depends on
 14 how the study is designed. In which way
 15 does study design cause a sibling control
 16 study to bias towards the null?
 17 MS. BROWN: Objection.
 18 Assumes facts. Misstates
 19 testimony.
 20 THE WITNESS: So a sibling
 21 control study, if you take a
 22 mother who took acetaminophen
 23 during pregnancy and had a child
 24 with autism and you compare the

Page 339

1 rates of those autism offspring to
 2 the rates of a parent who didn't
 3 take acetaminophen during
 4 pregnancy, that would be an
 5 effective sibling control that
 6 should, ideally, control for some
 7 genetic confounding at least.
 8 BY MR. WATTS:
 9 Q. Okay. I want -- one last
 10 issue and then we'll break.
 11 An environmental factor, as
 12 it relates to autism, really just means
 13 anything that's not genetic, right?
 14 MS. BROWN: Objection to
 15 form.
 16 THE WITNESS: Yeah, so,
 17 broadly speaking, people have
 18 included lots of different factors
 19 in the environment, some of which
 20 could actually be genetic in
 21 origin. But by definition, they
 22 are not heritable.
 23 BY MR. WATTS:
 24 Q. Okay. Good.

Page 340

1 So when you talk about an
 2 environmental factor, we know it's not
 3 heritable, right?
 4 MS. BROWN: Objection to the
 5 form.
 6 THE WITNESS: So it depends.
 7 BY MR. WATTS:
 8 Q. Now, environmental factors
 9 can trigger genetic predisposition,
 10 right?
 11 MS. BROWN: Objection.
 12 Assumes facts. Lacks foundation.
 13 THE WITNESS: You'll have to
 14 give me a specific instance.
 15 BY MR. WATTS:
 16 Q. Well, epigenetics is the
 17 study of how various factors can
 18 influence the expression of genes without
 19 changing the structure of the DNA, right?
 20 A. That's a true statement.
 21 Q. And the expression of autism
 22 genes may be influenced by environmental
 23 factors, right?
 24 MS. BROWN: Objection to the

Page 341

1 form.
 2 THE WITNESS: So
 3 theoretically and hypothetically,
 4 that is possible.
 5 BY MR. WATTS:
 6 Q. You cited to the Johnson
 7 paper, which I marked as Exhibit 415,
 8 that says precisely that. Do you agree
 9 with it?
 10 A. Let's go to the reference.
 11 Q. Okay.
 12 MR. WATTS: Exhibit 415.
 13 (Document marked for
 14 identification as Exhibit
 15 Kolevzon 415.)
 16 BY MR. WATTS:
 17 Q. 1188. Second column under
 18 "Environmental Issues."
 19 "However, the expression of
 20 the autism genes may be influenced by
 21 environmental factors. Although
 22 currently under investigation, these
 23 factors may represent a 'second hit'
 24 phenomenon that primarily occurs during

<p style="text-align: right;">Page 342</p> <p>1 fetal brain development. That is, 2 environmental factors may modulate 3 already existing genetic factors 4 responsible for the manifestation of 5 autism spectrum disorders in individual 6 children." 7 Did I read that right? 8 A. This is an important 9 hypothesis-generating idea and something 10 that's being actively pursued. 11 Q. Well, let's look at another 12 study you cited. 416, which is the Moy 13 and Nadler study? 14 A. Sorry, the what? 15 (Document marked for 16 identification as Exhibit 17 Kolevzon 416.) 18 BY MR. WATTS: 19 Q. Page 4, please. 20 A. Yep. 21 MR. WATTS: Page 4. 22 TRIAL TECH: That is Page 4. 23 MR. WATTS: First page. I'm 24 sorry. In the abstract -- pull up</p>	<p style="text-align: right;">Page 344</p> <p>1 same thing, which is that there 2 are possible environmental factors 3 that are worthy of study but, at 4 the moment, are hypothesis 5 generating. 6 BY MR. WATTS: 7 Q. Let's go to 511, which is 8 the LaSalle paper. 9 "Epigenomic signatures 10 reveal mechanistic clues and predictive 11 markers for autism spectrum disorder." 12 In 2023? 13 MS. BROWN: 511? 14 MR. WATTS: Yep. 15 MS. BROWN: This box doesn't 16 have it. Hang on. 17 BY MR. WATTS: 18 Q. It says, "These findings 19 have demonstrated that ASD etiology is 20 decidedly complex with hundreds of genes 21 and interactions with environmental 22 factors." 23 Is that what LaSalle says? 24 MS. BROWN: I object. He</p>
<p style="text-align: right;">Page 343</p> <p>1 the abstract. 2 Second sentence. Third 3 sentence, rather -- well, second 4 and third. 5 By MR. WATTS: 6 Q. "Etiology is thought to 7 involve complex multigenic interactions 8 and possible environmental contributions. 9 In this review, we focus on the genetic 10 pathways with multiple members 11 represented in autism candidate gene 12 lists. Many of these pathways can also 13 be impinged upon by environmental risk 14 factors associated with the disorder." 15 Did I read that right? 16 A. So like in all these 17 studies -- 18 Q. Did I read that right? 19 MS. BROWN: Well, let him 20 answer, please. 21 THE WITNESS: You read the 22 words on the page, but I need to 23 contextualize it by saying that 24 all these studies are saying the</p>	<p style="text-align: right;">Page 345</p> <p>1 needs a minute to look at LaSalle. 2 Lacks foundation. 3 BY MR. WATTS: 4 Q. Can you see it right at the 5 bottom of Column 1 on the first page? 6 A. So the first part of the 7 sentence is categorically true, that ASD 8 etiology is decidedly complex. It is 9 true that it involves hundreds of genes. 10 Q. And interactions? 11 A. Interacts with environmental 12 factors, at this point, remains 13 speculative. 14 Q. Okay. But the words on the 15 screen say, "involving hundreds of genes 16 and interactions with environmental 17 factors," does it not? 18 A. Those are the words. 19 Q. Okay. 20 A. But you are taking them out 21 of context. 22 Q. Okay. Let's go to Page 5 23 and take it out of context some more. 24 MS. BROWN: I hope you're</p>

<p style="text-align: right;">Page 346</p> <p>1 not being argumentive.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Second column at the top.</p> <p>4 "Together these results suggested a</p> <p>5 multi-hit intersecting pathway between</p> <p>6 genetic susceptibility and an</p> <p>7 environmental exposure observed through</p> <p>8 shared epigenomic signature."</p> <p>9 Is that right?</p> <p>10 MS. BROWN: I object. This</p> <p>11 lacks foundation to random</p> <p>12 sentences being read.</p> <p>13 THE WITNESS: I need to</p> <p>14 figure out what they are</p> <p>15 referencing. This is a review</p> <p>16 paper.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Well, Doctor, in your</p> <p>19 papers, you published a study in 2012</p> <p>20 with Sandin. "There's evidence that</p> <p>21 nonheritable perinatal events and/or</p> <p>22 environmental exposures are likely to</p> <p>23 have a significant etiological role,"</p> <p>24 right?</p>	<p style="text-align: right;">Page 348</p> <p>1 A. He is very passionate about</p> <p>2 exploring these risk factors. And if he</p> <p>3 were sitting here today, he would</p> <p>4 certainly not say that acetaminophen</p> <p>5 causes autism.</p> <p>6 MR. WATTS: Objection --</p> <p>7 THE WITNESS: That's</p> <p>8 speculative on my part.</p> <p>9 MR. WATTS: Yeah.</p> <p>10 Objection. Speculation.</p> <p>11 MS. BROWN: That question</p> <p>12 called for speculation, so the</p> <p>13 answer was appropriate.</p> <p>14 MR. WATTS: Okay, Judge.</p> <p>15 Let's keep going.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. You and Reichenberg have</p> <p>18 participated in the same grants seeking</p> <p>19 money from the federal government, the</p> <p>20 NIH, and others, to study environmental</p> <p>21 factors, right?</p> <p>22 A. Correct.</p> <p>23 Q. And let me just put up one</p> <p>24 of those abstracts, Exhibit 452.</p>
<p style="text-align: right;">Page 347</p> <p>1 A. There is no question that</p> <p>2 there are other nongenetic factors that</p> <p>3 play a role in autism. As of yet, we</p> <p>4 have not reliably identified them. And</p> <p>5 none of the risk factors have reached the</p> <p>6 level of causation.</p> <p>7 Q. Dr. Reichenberg there at</p> <p>8 Mount Sinai is very bullish on the idea</p> <p>9 that environmental factors have great</p> <p>10 importance with respect to autism, right?</p> <p>11 MS. BROWN: Objection.</p> <p>12 Lacks foundation.</p> <p>13 THE WITNESS:</p> <p>14 Dr. Reichenberg is the lead of our</p> <p>15 environmental and epidemiological</p> <p>16 group at Mount Sinai in the autism</p> <p>17 center, so, yes, he is --</p> <p>18 BY MR. WATTS:</p> <p>19 Q. And then --</p> <p>20 MS. BROWN: Let him finish,</p> <p>21 please.</p> <p>22 BY MR. WATTS:</p> <p>23 Q. I'm sorry, I thought you</p> <p>24 were done. Go ahead.</p>	<p style="text-align: right;">Page 349</p> <p>1 MS. BROWN: Can we take a</p> <p>2 break?</p> <p>3 MR. WATTS: Almost done.</p> <p>4 (Document marked for</p> <p>5 identification as Exhibit</p> <p>6 Kolevzon 452.)</p> <p>7 BY MR. WATTS:</p> <p>8 Q. Exhibit 452 is one of the</p> <p>9 grant abstracts, "Autism and Prenatal</p> <p>10 Endocrine Disruptors," that's referenced</p> <p>11 in your CV as one of the grants that</p> <p>12 you've worked on?</p> <p>13 A. Yes.</p> <p>14 Q. And part of what's said here</p> <p>15 is, "Both genetic and environmental</p> <p>16 factors contribute to autism spectrum</p> <p>17 disorder, but environmental factors have</p> <p>18 been understudied. Because environmental</p> <p>19 factors are potentially modifiable, they</p> <p>20 should be a research priority."</p> <p>21 Is that what y'all said?</p> <p>22 A. That's what we said.</p> <p>23 MR. WATTS: Let's take that</p> <p>24 break.</p>

Page 350

1 THE VIDEOGRAPHER: The time
2 right now is 12:43 p.m. We are
3 off the record.
4 - - -
5 (Whereupon a luncheon recess
6 was taken.)
7 - - -
8 THE VIDEOGRAPHER: The time
9 right now is 1:32 p.m. We're back
10 on the record.
11 - - -
12 CONTINUED EXAMINATION
13 - - -
14 BY MR. WATTS:
15 Q. Doctor, your research has
16 included an examination of risk factors
17 for autism spectrum disorder, correct?
18 A. Yes. I've reviewed some of
19 the literature and I have some ongoing
20 projects that are doing that.
21 Q. And you have done studies on
22 environmental risks for autism, right?
23 A. I'm involved in studies that
24 are looking at environmental risks for

Page 351

1 autism, yes.
2 Q. And having done studies on
3 the environmental risks for autism, it is
4 not your testimony under oath that there
5 are no studies that suggest or find that
6 there are causes of autism other than
7 genetic, correct?
8 A. Can you repeat the question?
9 Q. Having conducted or
10 participated in the studies on
11 environmental risk for autism, it is not
12 your testimony under oath that there are
13 no studies that suggest or find that
14 there are causes of autism other than
15 genetic?
16 A. So there's -- there's sort
17 of a double negative built into that.
18 My testimony is that the
19 only established causes of autism are
20 genetic in origin. And there are ongoing
21 studies of environmental risk factors.
22 Q. Let me show you your
23 testimony in the Purdie versus Mercy
24 Medical case, Exhibit 486.

Page 352

1 (Document marked for
2 identification as Exhibit
3 Kolevzon 486.)
4 BY MR. WATTS:
5 Q. It's August 4, 2020.
6 Page 155, Lines 15 through 18.
7 "Question: Is it your
8 testimony under oath that there are no
9 studies that suggest or find that there
10 are causes of autism other than genetic?"
11 Is your answer: "No, that
12 is not my testimony"?
13 MS. BROWN: Objection to
14 form.
15 THE WITNESS: I think I'm
16 probably saying the same thing now
17 as I was saying then. That's
18 what's written on the page, yes.
19 BY MR. WATTS:
20 Q. Okay. You wrote a paper
21 with a scientist named Puleo in 2012?
22 A. You'll have to refresh my
23 memory.
24 Q. Okay.

Page 353

1 MR. WATTS: Exhibit 429,
2 please.
3 (Document marked for
4 identification as Exhibit
5 Kolevzon 429.)
6 BY MR. WATTS:
7 Q. "Advancing paternal age and
8 simplex autism."
9 Were you one of the authors
10 together with Puleo in this article, 2011
11 or '12?
12 A. Yes, I was.
13 Q. Okay. If we look at
14 Page 368, part of what you write is,
15 "Causal gene mutations in male sperm
16 cells, environmental exposure with
17 mutagenic effects, increasing use of
18 infertility or assisted reproductive
19 technologies, or the combination of these
20 mechanisms may all be potential
21 descriptors. Such mechanisms may
22 particularly play a role in autism
23 spectrum disorder that appears less
24 likely to be inherited, occurring in

Page 354

1 families with no prior history of the
 2 disorder, with spontaneous mutation
 3 hypotheses thus far gaining the most
 4 research attention and support."
 5 Did I read that correctly?
 6 A. So the words on the page
 7 were read correctly.
 8 The intent was to better
 9 understand paternal age effects. And the
 10 idea is that as men age, their ability to
 11 synthesize sperm is more susceptible to
 12 copy errors, and so they pass on
 13 mutations to children. So it's,
 14 therefore, still heritable.
 15 Q. Did I read the words on the
 16 page correctly, sir?
 17 MS. BROWN: Asked and
 18 answered.
 19 THE WITNESS: So I did say
 20 that you read the words on the
 21 page correctly, but, I think,
 22 taking those words out of context.
 23 It's important to understand what
 24 the intent was.

Page 355

1 BY MR. WATTS:
 2 Q. Well, the context is the
 3 first sentence that I didn't read. "The
 4 etiological implications of these
 5 paternal age findings remain unclear,"
 6 right?
 7 A. So, in --
 8 Q. I'll tell you what. Let me
 9 strike the question --
 10 A. We just have to go back to
 11 the date of the article.
 12 Q. Let me -- let me re-ask a
 13 different question that's on my mind.
 14 Do you see on Line 2 where
 15 it says, "Environmental exposure with
 16 mutagenic effects"?
 17 A. I see those words, yes.
 18 Q. A mutagen is a chemical
 19 agent that increases the rate of a
 20 genetic mutation by interfering with the
 21 function of nucleic acids, right?
 22 A. Yes.
 23 Q. It permanently changes
 24 genetic material?

Page 356

1 A. Depends on whether it's
 2 permanent, but it can change...
 3 Q. So environmental exposure
 4 can change genetic material, right?
 5 A. I think we've established
 6 that environmental exposure can change
 7 genetic material. I think the issue is
 8 that in autism, that has not been
 9 established.
 10 Q. Well, except in your book
 11 chapter.
 12 A. Which chapter is that?
 13 Q. We'll keep going.
 14 Doctor, what is ID?
 15 A. ID is an acronym that stands
 16 for intellectual disability.
 17 Q. Genetic and environmental
 18 factors are implicated in intellectual
 19 disability, correct?
 20 A. Genetic and environmental
 21 factors are implicated.
 22 Q. Okay. Have adverse outcomes
 23 in neurodevelopmental function been
 24 associated with conventional medications.

Page 357

1 used during pregnancy?
 2 MS. BROWN: Objection to the
 3 form.
 4 THE WITNESS: It's a very
 5 broad statement. It would be
 6 helpful for you to be more
 7 specific.
 8 BY MR. WATTS:
 9 Q. Sure. Exhibit 463.
 10 (Document marked for
 11 identification as Exhibit
 12 Kolevzon 463.)
 13 BY MR. WATTS:
 14 Q. You wrote a paper in 2017
 15 with Viktorin. Do you remember that
 16 paper?
 17 A. If I take a look at it, I'm
 18 sure I'll remember it.
 19 Q. Okay. Exhibit 463.
 20 Are you a co-author with
 21 Alexander Viktorin?
 22 A. Yes.
 23 Q. And where does he work?
 24 A. He worked at Mount Sinai at

<p style="text-align: right;">Page 358</p> <p>1 the time, I believe.</p> <p>2 Q. Okay. Rudolf Uher, where</p> <p>3 did he work?</p> <p>4 A. I don't know, but we could</p> <p>5 check the affiliations.</p> <p>6 Q. Reichenberg worked at Mount</p> <p>7 Sinai, right?</p> <p>8 A. Yes, for sure.</p> <p>9 Q. Sven Sandin worked at Mount</p> <p>10 Sinai, right?</p> <p>11 A. Yes, for sure.</p> <p>12 Q. So there's at least four of</p> <p>13 you that worked at Mount Sinai that wrote</p> <p>14 this article entitled, "Association of</p> <p>15 Antidepressant Medication Use During</p> <p>16 Pregnancy With Intellectual Disability in</p> <p>17 Offspring," right?</p> <p>18 A. Yes.</p> <p>19 Q. If we go to the second page,</p> <p>20 the top left. Part of what you all wrote</p> <p>21 is, "Genetic and environmental factors</p> <p>22 are implicated in intellectual</p> <p>23 disability," right?</p> <p>24 A. Yep.</p>	<p style="text-align: right;">Page 360</p> <p>1 page. Keep going. 63. Go. Right</p> <p>2 there.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. Do you see that, sir?</p> <p>5 A. Yes.</p> <p>6 Q. And if we could go to the</p> <p>7 next page, 856. Says, "Nongenetic</p> <p>8 factors, including advancing parental</p> <p>9 age, have also started emerging in autism</p> <p>10 spectrum disorder, although the precise</p> <p>11 nature of these associations has yet to</p> <p>12 be determined.</p> <p>13 "In addition, environmental</p> <p>14 factors (e.g., maternal alcohol abuse</p> <p>15 during gestation, infections, birth</p> <p>16 complications, and malnutrition) are</p> <p>17 major contributors of ID etiology."</p> <p>18 Is that what you wrote?</p> <p>19 A. That's what's written. And,</p> <p>20 of course, I think we've covered this.</p> <p>21 There's no debate about whether or not</p> <p>22 there are environmental factors. The</p> <p>23 debate is what those factors are.</p> <p>24 Q. With respect to those</p>
<p style="text-align: right;">Page 359</p> <p>1 Q. And they include "factors</p> <p>2 that affect fetal development, such as</p> <p>3 uncontrolled diabetes and congenital</p> <p>4 exposures to infectious agents or toxic</p> <p>5 agents," right?</p> <p>6 A. It does say these are</p> <p>7 implicated. That's true.</p> <p>8 Q. Doctor, did you write a</p> <p>9 paper with a gentleman by the name of</p> <p>10 Costales in 2018?</p> <p>11 A. Yes.</p> <p>12 MR. WATTS: Exhibit 465.</p> <p>13 (Document marked for</p> <p>14 identification as Exhibit</p> <p>15 Kolevzon 465.)</p> <p>16 BY MR. WATTS:</p> <p>17 Q. This is in Charney and</p> <p>18 Nestler's book, Neurobiology of Mental</p> <p>19 Illness, Fifth Edition. And it's</p> <p>20 Chapter 63. "Neurobiology of Autism</p> <p>21 Spectrum Disorder and Intellectual</p> <p>22 Disability, Animal and Human Studies,"</p> <p>23 right?</p> <p>24 MR. WATTS: Go to the next</p>	<p style="text-align: right;">Page 361</p> <p>1 factors, there are a group of factors</p> <p>2 that likely act on the genetic</p> <p>3 vulnerability to increase the risk of</p> <p>4 autism spectrum disorder; is that right?</p> <p>5 MS. BROWN: Objection to the</p> <p>6 form of the question. Lacks</p> <p>7 foundation.</p> <p>8 THE WITNESS: It's correct</p> <p>9 that that is a good idea and a</p> <p>10 hypothetical mechanism that's</p> <p>11 worthy of exploration. But it has</p> <p>12 not been established or commonly</p> <p>13 accepted in the scientific</p> <p>14 community.</p> <p>15 BY MR. WATTS:</p> <p>16 Q. Well, let's go to your blog.</p> <p>17 MR. WATTS: Exhibit 474.</p> <p>18 (Document marked for</p> <p>19 identification as Exhibit</p> <p>20 Kolevzon 474.)</p> <p>21 BY MR. WATTS:</p> <p>22 Q. In this blog, you shared</p> <p>23 research on autism diagnosis and</p> <p>24 explained current treatments for the</p>

<p style="text-align: right;">Page 362</p> <p>1 disease, right?</p> <p>2 A. Give me a moment, because I</p> <p>3 don't -- I don't have any memory</p> <p>4 whatsoever of this blog. I don't recall</p> <p>5 blogging.</p> <p>6 Q. Well, on Page 3 of this</p> <p>7 exhibit, it says at the top, "There's</p> <p>8 also a group of factors that likely act</p> <p>9 on the genetic vulnerability to increase</p> <p>10 the risk of autism spectrum disorder.</p> <p>11 These risk factors include very low birth</p> <p>12 weight, preterm birth, older paternal</p> <p>13 age, and exposure to several toxins</p> <p>14 during pregnancy"; is that right?</p> <p>15 A. So going back to the page</p> <p>16 before, it says that autism is primarily</p> <p>17 a genetic disorder. And that, yes, there</p> <p>18 are likely some environmental risk</p> <p>19 factors that act to increase the risk.</p> <p>20 Q. Okay. And so the bottom</p> <p>21 line is, if you're genetically</p> <p>22 predisposed, the environmental factor may</p> <p>23 occur and push you over the edge, which</p> <p>24 then leads to the development of autism</p>	<p style="text-align: right;">Page 364</p> <p>1 MS. BROWN: Objection.</p> <p>2 Lacks foundation.</p> <p>3 THE WITNESS: So you'd need</p> <p>4 to show me exactly what the</p> <p>5 testimony is --</p> <p>6 BY MR. WATTS:</p> <p>7 Q. Exhibit 486, Page 140,</p> <p>8 Line 21, through 141, Line 5.</p> <p>9 (Document marked for</p> <p>10 identification as Exhibit</p> <p>11 Kolevzon 486.)</p> <p>12 BY MR. WATTS:</p> <p>13 Q. "Question: I understand</p> <p>14 your opinion -- all right. I understand</p> <p>15 the first part of your opinion as a</p> <p>16 layperson, which is that if you're</p> <p>17 genetically predisposed, the</p> <p>18 environmental factor may occur and push</p> <p>19 you over the edge which then leads to the</p> <p>20 development of that condition, correct?"</p> <p>21 And what was your answer?</p> <p>22 A. So --</p> <p>23 MS. BROWN: I object. Let's</p> <p>24 get him the hardcopy.</p>
<p style="text-align: right;">Page 363</p> <p>1 spectrum disorder, right?</p> <p>2 MS. BROWN: I object to the</p> <p>3 form. It lacks foundation.</p> <p>4 THE WITNESS: So the</p> <p>5 hypothesis is exactly that.</p> <p>6 Correct.</p> <p>7 BY MR. WATTS:</p> <p>8 Q. Well, it's more than a</p> <p>9 hypothesis. It was your testimony in the</p> <p>10 Purdie versus Mercy Medical case in 2020,</p> <p>11 right?</p> <p>12 MS. BROWN: Objection to</p> <p>13 form.</p> <p>14 THE WITNESS: This is a</p> <p>15 conceptual framework for how</p> <p>16 environmental factors act, and as</p> <p>17 I said, there are no established</p> <p>18 environmental factors that reach</p> <p>19 the level of causation.</p> <p>20 MR. WATTS: Objection.</p> <p>21 Nonresponsive.</p> <p>22 BY MR. WATTS:</p> <p>23 Q. Was that your testimony in</p> <p>24 the Purdie versus Mercy Medical case?</p>	<p style="text-align: right;">Page 365</p> <p>1 Is this something we've</p> <p>2 already looked at?</p> <p>3 BY MR. WATTS:</p> <p>4 Q. Sir, what was your answer?</p> <p>5 A. I need to see the line of</p> <p>6 questioning in order to better understand</p> <p>7 the context.</p> <p>8 MS. BROWN: I'll try to find</p> <p>9 it for you.</p> <p>10 THE WITNESS: But my answer,</p> <p>11 as it's written on the page, is</p> <p>12 "Yes."</p> <p>13 BY MR. WATTS:</p> <p>14 Q. Okay. Do you remember the</p> <p>15 Mercy Medical case, the Purdie case?</p> <p>16 A. I remember participating. I</p> <p>17 don't remember the details.</p> <p>18 Q. Okay. In the book chapter</p> <p>19 that we started this deposition with, in</p> <p>20 March of 2022, the Textbook of Autism</p> <p>21 Spectrum Disorder, second division --</p> <p>22 Second Edition, your book chapter says,</p> <p>23 "There is strong evidence that</p> <p>24 nonheritable prenatal, perinatal and</p>

<p style="text-align: right;">Page 366</p> <p>1 parental events play a role in the 2 etiology of autism spectrum disorder," 3 right? 4 MS. BROWN: Objection to the 5 form. 6 THE WITNESS: So this is the 7 book chapter that was written by 8 Ori Kapra. Is that -- that's the 9 one we are talking about? 10 BY MR. WATTS: 11 Q. It's the one that's got your 12 name on it that wasn't on your CV. 13 A. Yeah. 14 MS. BROWN: Well, can we 15 just have the year? 16 BY MR. WATTS: 17 Q. 2022 March. 18 A. So as I said, autism is 19 80 percent, maybe more, heritable. But 20 when you look at twin studies, there are 21 not 100 percent concordant, which means 22 that there's some environmental effect 23 that plays a role in the etiology. 24 However, there have been no clear</p>	<p style="text-align: right;">Page 368</p> <p>1 Q. The etiology of autism 2 spectrum disorder is multifactorial, 3 includes a combination of genetic and 4 environmental factors as well as their 5 interaction, right? 6 A. Theoretically, in some 7 cases, that may be right. In most cases, 8 I would identify to date, a single 9 genetic factor is sufficient to cause 10 autism. 11 Q. In the nontheoretical March 12 of 2021 paper you wrote with Katz, that's 13 been marked as Exhibit 491, you wrote, 14 "The etiology of ASD is thought to be 15 multifactorial and includes a combination 16 of genetic and environmental factors, as 17 well as their interaction," did you not? 18 A. That's what's written on the 19 page. But in the broader context of 20 autism spectrum disorder, as I said, 21 there are many causes of autism where a 22 single genetic mutation is sufficient to 23 cause a phenotype. 24 Q. Doctor, I want to talk to</p>
<p style="text-align: right;">Page 367</p> <p>1 established factors that rise to the 2 level of causation. 3 And as it relates to this 4 case, acetaminophen has been studied as 5 it relates to autism, and there's no 6 evidence that it's even associated. 7 MR. WATTS: Objection. 8 Nonresponsive. 9 MS. BROWN: Object. 10 BY MR. WATTS: 11 Q. In your book chapter, March 12 of 2022, one of the key points says, 13 "There is strong evidence that 14 nonheritable prenatal, perinatal, and 15 parental events play a role in the 16 etiology of autism spectrum disorder"; is 17 that right? 18 MS. BROWN: Asked and 19 answered. I object. 20 THE WITNESS: I would say 21 strong evidence exists for some 22 factors. But acetaminophen is not 23 among them. 24 BY MR. WATTS:</p>	<p style="text-align: right;">Page 369</p> <p>1 you about comorbidities. Explain for the 2 jury what a comorbidity is. 3 A. A comorbidity is a condition 4 that occurs along with another condition. 5 So in the case of autism, a common 6 comorbidity would be something like 7 anxiety or attention problems or 8 hyperactivity. 9 Q. Okay. Did you write a paper 10 with Vahe Khachadourian of Mount Sinai on 11 comorbidities and autism spectrum 12 disorder and their etiologies? 13 A. It's vaguely familiar. 14 Q. It says published online in 15 February 2023, this year. Does that 16 help? Published in Translational 17 Psychiatry? 18 A. Let's take it out so I can 19 see. 20 MR. WATTS: Okay. Let's go 21 to Exhibit 514. 22 (Document marked for 23 identification as Exhibit 24 Kolevzon 514.)</p>

<p style="text-align: right;">Page 370</p> <p>1 BY MR. WATTS:</p> <p>2 Q. First of all, did you write</p> <p>3 that paper with Mr. -- or</p> <p>4 Dr. Khachadourian?</p> <p>5 A. Dr. Khachadourian wrote the</p> <p>6 paper. I was a co-author.</p> <p>7 Q. And in terms of the other</p> <p>8 authors of the paper, Behrang Mahjani at</p> <p>9 Mount Sinai, right?</p> <p>10 A. Yeah. Behrang, Sven, Joe,</p> <p>11 Avi and Magdalena are all at Mount Sinai.</p> <p>12 Q. Everybody on this paper is a</p> <p>13 Mount Sinai scientist, right?</p> <p>14 A. Yes.</p> <p>15 Q. And in the paper, if we look</p> <p>16 at Page 10 of 17, the seven Mount Sinai</p> <p>17 scientists co-authoring this paper end</p> <p>18 the discussion by saying, "These results</p> <p>19 suggest that the higher rates of certain</p> <p>20 comorbidities in autism spectrum disorder</p> <p>21 may be partly attributable to the higher</p> <p>22 rates of the underlying risk factors</p> <p>23 (environmental exposures, or the</p> <p>24 underlying genetic variation) among the</p> <p style="text-align: right;">Page 371</p>	<p style="text-align: right;">Page 372</p> <p>1 Q. It has a direct line from</p> <p>2 genetic factors to autism spectrum</p> <p>3 disorder, right?</p> <p>4 A. Yes.</p> <p>5 Q. And it has direct lines from</p> <p>6 genetic factors and environmental</p> <p>7 exposures with respect to comorbidities,</p> <p>8 right?</p> <p>9 A. This is a very simplistic</p> <p>10 diagram illustrating the interaction</p> <p>11 between the environment and genetics,</p> <p>12 yes.</p> <p>13 Q. And it's a very simplistic</p> <p>14 diagram included in a paper that seven</p> <p>15 scientists at Mount Sinai, including</p> <p>16 yourself, wrote this year, right?</p> <p>17 A. There's no debate that this</p> <p>18 is a reasonable framework.</p> <p>19 Q. Okay. If we go to Page 13</p> <p>20 of 17.</p> <p>21 Part of which you all</p> <p>22 concluded was, "We demonstrated that the</p> <p>23 common comorbidities in individuals with</p> <p>24 autism spectrum disorder are often</p> <p style="text-align: right;">Page 373</p>
<p>1 affected individuals, rather than to</p> <p>2 downstream effects of autism spectrum</p> <p>3 disorder itself."</p> <p>4 Is that what you all wrote?</p> <p>5 A. Yeah, I'm not prepared to</p> <p>6 comment on this paper without looking</p> <p>7 back at the methods.</p> <p>8 Q. Okay. Are those words on</p> <p>9 the page?</p> <p>10 A. Well, you've read the words</p> <p>11 on the page correctly.</p> <p>12 Q. Okay.</p> <p>13 A. But in order to interpret</p> <p>14 them I need more time on this paper.</p> <p>15 Q. Sure.</p> <p>16 The next page has a</p> <p>17 Figure 5. This Figure 5 shows lines</p> <p>18 between genetic factors and environmental</p> <p>19 exposure, right?</p> <p>20 A. Yes.</p> <p>21 Q. It has a direct line between</p> <p>22 environmental exposure to autism spectrum</p> <p>23 disorder, right?</p> <p>24 A. Yes.</p>	<p>1 associated with pre- and postnatal</p> <p>2 exposure also linked to autism spectrum</p> <p>3 disorder."</p> <p>4 Did I read that right?</p> <p>5 A. Again, if you want to go</p> <p>6 into the results and the conclusions, we</p> <p>7 need to look at the methods. And I</p> <p>8 haven't looked at the methods in a long</p> <p>9 time.</p> <p>10 Q. Now, there was, without</p> <p>11 pulling out the CV, a substantial part of</p> <p>12 your CV that talks about all of your</p> <p>13 grants that you've done in the past and</p> <p>14 done -- or are doing now, right?</p> <p>15 A. Yes.</p> <p>16 Q. Okay. And without being</p> <p>17 pejorative about it, you all will go to</p> <p>18 third-party financiers and seek funding</p> <p>19 for research on different topics, right?</p> <p>20 MS. BROWN: Object to the</p> <p>21 form of the question.</p> <p>22 THE WITNESS: We have a</p> <p>23 diverse sort of body of funders</p> <p>24 that may include third parties, as</p>

<p style="text-align: right;">Page 374</p> <p>1 you say.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Okay. And before I get to</p> <p>4 the section dealing with Johnson &</p> <p>5 Johnson funding some of your work, the</p> <p>6 government funds some of your work,</p> <p>7 right?</p> <p>8 A. The NIH provides grants to</p> <p>9 fund some of our work, yes.</p> <p>10 Q. And the process is, is that</p> <p>11 they may put out a, I'm going to call it</p> <p>12 a call bar, for lack -- we want people</p> <p>13 willing to research X, and then you can</p> <p>14 make a grant application and they can</p> <p>15 decide whether to deploy capital to fund</p> <p>16 your work on that particular subject,</p> <p>17 right?</p> <p>18 A. It's called a request for</p> <p>19 applications.</p> <p>20 Q. Okay. Let's just look at a</p> <p>21 couple of those. Exhibit 451.</p> <p>22 (Document marked for</p> <p>23 identification as Exhibit</p> <p>24 Kolevzon 451.)</p>	<p style="text-align: right;">Page 376</p> <p>1 them, yes, the NICHD is interested</p> <p>2 in environmental risk factors.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. Okay. And you know what the</p> <p>5 NICHD is. That would be the National</p> <p>6 Institute of Child Health and Human</p> <p>7 Development, right?</p> <p>8 A. Yes.</p> <p>9 Q. And then down at the bottom,</p> <p>10 it talks about the NIMH, and that's</p> <p>11 National Institute of Mental Health,</p> <p>12 right?</p> <p>13 A. Right.</p> <p>14 Q. Okay. Up at the top, the</p> <p>15 National Institute for Child Health and</p> <p>16 Human Development is seeking applications</p> <p>17 "that focus on environmental exposures</p> <p>18 that occurred prenatally during critical</p> <p>19 windows of fetal development and that</p> <p>20 impact early child development," right?</p> <p>21 A. So I think what this points</p> <p>22 to is the importance of exploring this</p> <p>23 area.</p> <p>24 Q. Okay.</p>
<p style="text-align: right;">Page 375</p> <p>1 BY MR. WATTS:</p> <p>2 Q. This is from the Department</p> <p>3 of Health and Human Services. It's a</p> <p>4 research project grant. The funding</p> <p>5 opportunity title is "Environmental</p> <p>6 Contributors to Autism Spectrum</p> <p>7 Disorder," right?</p> <p>8 A. That's -- that's the title,</p> <p>9 yes.</p> <p>10 Q. If we look at Page 6 of 19.</p> <p>11 It says the "NICHD is interested in</p> <p>12 applications that focus on environmental</p> <p>13 exposures that occurred prenatally during</p> <p>14 critical windows of fetal development and</p> <p>15 that impact early childhood development."</p> <p>16 MS. BROWN: Let's give you a</p> <p>17 second to look at the document and</p> <p>18 to get to where counsel is.</p> <p>19 BY MR. WATTS:</p> <p>20 Q. Did I read that right?</p> <p>21 MS. BROWN: One second.</p> <p>22 THE WITNESS: So there is a</p> <p>23 huge body of priorities, according</p> <p>24 to different institutes, and among</p>	<p style="text-align: right;">Page 377</p> <p>1 A. And there are many, many</p> <p>2 people that are looking to fund this</p> <p>3 area, because we need to learn a lot more</p> <p>4 about it.</p> <p>5 Q. Okay.</p> <p>6 A. And that's because most of</p> <p>7 it remains hypothetical.</p> <p>8 Q. And about five lines down it</p> <p>9 says, "Specifically, the National</p> <p>10 Institute of Child Health and Human</p> <p>11 Development is interested in studies</p> <p>12 focusing on prenatal exposures that alter</p> <p>13 the genetic or epigenetic profile and</p> <p>14 predispose to autism susceptibility;</p> <p>15 factors that alter the maternal or</p> <p>16 offspring microbiome and affect infant</p> <p>17 development; prenatal exposures to</p> <p>18 maternal disease, conditions, or</p> <p>19 medications; and the presence of</p> <p>20 significant inflammation in utero and how</p> <p>21 it might be quantitatively related to</p> <p>22 altered cellular function and development</p> <p>23 in the offspring."</p> <p>24 Did I read that right?</p>

Page 378

1 A. There is an infinite number
2 of factors that are important to study,
3 and it may be relevant.
4 Q. Did I read that right?
5 A. The words you read are
6 correct.
7 Q. And then it says the
8 "National Institute for Child Health and
9 Human Development is also interested in
10 specific gene-environment interactions
11 influenced by prenatal exposures," right?
12 A. These are important things
13 to study.
14 Q. Okay. And did Mount Sinai
15 submit a grant application in response to
16 this call for grants?
17 MS. BROWN: Objection to the
18 form.
19 THE WITNESS: When was this
20 call posted? These applications
21 were due in 2015, so I can't be
22 certain.
23 Mount Sinai does investigate
24 various risk factors for autism,

Page 379

1 as you know.
2 BY MR. WATTS:
3 Q. Okay. Are you familiar with
4 the Food and Drug Administration
5 fast-tracking testing with respect to
6 people's teeth and hair in order to
7 collect information that can be used to
8 predict autism diagnoses?
9 A. I am roughly familiar with
10 it. I am not an expert in this area.
11 Q. Okay. Let me show you
12 Exhibit 496.
13 (Document marked for
14 identification as Exhibit
15 Kolevzon 496.)
16 BY MR. WATTS:
17 Q. It's a news article in
18 Spectrum News by a Laura Dattaro
19 entitled, "FDA Cites Hair-Based Autism
20 Diagnostic Aid As a 'Breakthrough.'"
21 Do you see that?
22 MS. BROWN: Give him a
23 minute to read it.
24 MR. WATTS: Sure.

Page 380

1 THE WITNESS: Okay.
2 BY MR. WATTS:
3 Q. On Page 2, the article says,
4 "U.S. Food and Drug Administration, or
5 FDA, has granted 'breakthrough device'
6 designation to a hair-based test designed
7 to aid autism diagnosis."
8 Do you see that, sir?
9 A. I do. What they are trying
10 to do is develop a biomarker that will
11 speed the path towards assessment.
12 Q. Okay. The test, called
13 StrandDx, analyzes the levels of
14 chemicals in a strand of a child's hair
15 to capture a snapshot of her 'exposome'-
16 some of her cumulative environmental
17 exposures and how she regulates certain
18 essential nutrients. The measures
19 suggest how a person's physiology
20 responds to her environment, which can
21 predict her chances of having autism,
22 says Manish Arora."
23 Dr. Arora is a scientist at
24 Mount Sinai, right?

Page 381

1 A. Yes.
2 Q. It says, "Previous research
3 from the test's makers suggested that
4 autistic people's teeth contain atypical
5 levels of some metals, and that
6 information can be used to predict autism
7 diagnoses," right?
8 A. So, taken out of context,
9 what that overlooks is that it wasn't the
10 levels of the metals, it was the way that
11 the metals regulate themselves. And the
12 rhythmicity of the level -- of the
13 metals.
14 Q. Did I read it right?
15 MS. BROWN: Let him finish
16 his answer, please.
17 THE WITNESS: This is a good
18 example of when you read words on
19 a page, the words can be
20 misleading.
21 And so, yes, you read them
22 right, but they are misleading.
23 BY MR. WATTS:
24 Q. Okay. And then give you

Page 382

1 some more context. On Page 3 the article
 2 says, "Analyzing hair samples makes it
 3 possible to look at chemical exposures
 4 and how the body regulates them over
 5 time, Arora says, similar to how the
 6 rings of a tree can reveal its age and
 7 changing environment."
 8 Do you see that, sir?
 9 A. I see that's written. It's
 10 generally very broad, and I don't
 11 necessarily agree with it.
 12 Q. Now, Dr. Manish Arora is a
 13 scientist at Mount Sinai with whom you
 14 have published scientific literature,
 15 right?
 16 A. Correct.
 17 Q. You've done grants together
 18 with him?
 19 A. I don't think that's
 20 correct.
 21 Q. How many articles have you
 22 published with Dr. Arora?
 23 A. I would have to check.
 24 Q. Okay. Do you find him to be

Page 383

1 a reputable scientist?
 2 MS. BROWN: Objection to the
 3 form.
 4 THE WITNESS: I respect
 5 Dr. Arora. He is a thoughtful and
 6 well-intentioned scientist.
 7 BY MR. WATTS:
 8 Q. Okay. Would you agree that
 9 Dr. Arora is a thoughtful and
 10 well-intentioned scientist, employed by
 11 Mount Sinai, is committed to
 12 understanding pre- and postnatal
 13 exposures that contribute to autism
 14 spectrum disorder?
 15 MS. BROWN: Objection to the
 16 form.
 17 THE WITNESS: I think it's
 18 important for him to try to
 19 understand ways of speeding the
 20 way that we get people diagnosed.
 21 I think that these
 22 biomarkers in and of themselves
 23 are not going to speak much to
 24 etiology. But they may help

Page 384

1 people take the early signs more
 2 seriously and lead to faster
 3 diagnoses.
 4 BY MR. WATTS:
 5 Q. Okay. In trying to develop
 6 a biomarker with respect to what we see
 7 in a child's teeth or a child's hair, do
 8 you agree that that is a biomarker that
 9 is trying to look at the chemical
 10 exposures that child has been subjected
 11 to and how the body is regulating it over
 12 time?
 13 MS. BROWN: Objection to the
 14 form.
 15 THE WITNESS: So biomarkers
 16 can be used for many different
 17 things. They --
 18 BY MR. WATTS:
 19 Q. Including environment --
 20 MS. BROWN: Well, let him
 21 finish --
 22 BY MR. WATTS:
 23 Q. I'm sorry. I didn't mean to
 24 interrupt.

Page 385

1 But including environment,
 2 right?
 3 A. So I think some biomarkers
 4 can reflect environmental impacts. But
 5 those environmental impacts don't
 6 necessarily have anything to do with
 7 etiology. They just are a marker.
 8 Q. Sure.
 9 A. So what's the cause and
 10 what's the effect?
 11 Q. They reflect exposure,
 12 right?
 13 MS. BROWN: Objection to the
 14 form.
 15 THE WITNESS: They
 16 potentially reflect differential
 17 exposure.
 18 BY MR. WATTS:
 19 Q. Okay. And if they reflect
 20 differential exposure to an environmental
 21 agent known to cause or play a role in
 22 increasing the risk of ASD that can allow
 23 a diagnosis at an earlier point in time
 24 and allow for treatment of ASD at an

Page 386

1 earlier point, that's the goal, right?

2 MS. BROWN: Objection to the

3 form.

4 THE WITNESS: So that's a

5 serious hypothetical. Because

6 there hasn't been, like, a

7 specific environmental factor

8 that's been established as a

9 cause.

10 BY MR. WATTS:

11 Q. So we obviously disagree

12 with each other on that.

13 But the premise of my

14 question was, that's the goal of the

15 environmental biomarker, through the hair

16 and the teeth, to be able to diagnose

17 something earlier, right?

18 A. That is one of the goals,

19 yeah.

20 Q. Okay. Yeah. And along the

21 lines of attempting to understand

22 prenatal and postnatal exposures that

23 contribute to autism, that's a laudatory

24 goal, right?

Page 387

1 A. A laudatory goal?

2 Q. Yeah.

3 A. I think we talked about the

4 idea that if you can discover risk

5 factors that are modifiable and reduce

6 the risk, that would be something that's

7 important to do.

8 Q. Okay. Let's go back to 568,

9 which is Wendy Chung's SPARK PowerPoint.

10 Page 42.

11 She ends, "We're committing

12 to understanding" -- and the last thing

13 that she's committed to understanding is

14 pre- and postnatal exposure contributing

15 to autism.

16 Do you see that?

17 A. I see that, yeah.

18 Q. That's a laudatory goal,

19 right?

20 A. You know, we all have the

21 same goal. I think the question is how

22 do we interpret the science as it stands

23 today.

24 Q. Okay.

Page 388

1 A. I think the point that

2 everyone is still searching in many ways

3 underscores how much we have left to

4 know. Especially as it relates to

5 acetaminophen.

6 Q. With respect to these

7 laudatory goals, do you believe that the

8 government generally tries to fund

9 research that is important to improving

10 the treatment of autism spectrum

11 disorder?

12 MS. BROWN: Objection.

13 Overbroad.

14 THE WITNESS: I can't really

15 comment on the government's

16 motivations or priorities. I'm

17 not involved in those decisions.

18 BY MR. WATTS:

19 Q. Let's go to Exhibit 521.

20 (Document marked for

21 identification as Exhibit

22 Kolevzon 521.)

23 BY MR. WATTS:

24 Q. This is dated October 22nd

Page 389

1 of 2019.

2 And this is a Mount Sinai

3 press release. It says Mount Sinai has

4 been "awarded \$25 million to study the

5 environment's influence on people's

6 health throughout their lifetimes."

7 Do you see that?

8 MS. BROWN: Let's just give

9 him a minute to look at it,

10 please.

11 THE WITNESS: Yeah, this is

12 Manish's Exposomic Institute.

13 BY MR. WATTS:

14 Q. Okay. You said Manish's

15 expo --

16 A. Exposome Institute.

17 Q. Institute?

18 A. Yeah.

19 Q. Okay. And just so that

20 we've got it in the record. Exposomic

21 means what?

22 A. It's kind of a word that I

23 only first heard recently. But as I

24 understand it, it relates to the universe

<p style="text-align: right;">Page 390</p> <p>1 of environmental exposures, like the 2 genome or the exposome. 3 Q. Okay. So exposomic is the 4 way in which environmental exposures 5 affects the genome? 6 MS. BROWN: Objection. 7 Misstates testimony. 8 THE WITNESS: That's not 9 what I said, and that's not how I 10 understand it. 11 BY MR. WATTS: 12 Q. Okay. When asked during 13 your trial testimony in Galveston earlier 14 this year about Manish Arora securing 15 this \$25 million grant, that was to 16 explore environmental factors in autism 17 spectrum disorder, wasn't it? 18 MS. BROWN: Objection to the 19 form of the question. 20 THE WITNESS: Can you repeat 21 the question? 22 BY MR. WATTS: 23 Q. Sure. 24 MR. WATTS: Let's put up</p>	<p style="text-align: right;">Page 392</p> <p>1 spends the money or what he's working on. 2 Q. Let's go to Exhibit 565. 3 (Document marked for 4 identification as Exhibit 5 Kolevzon 565.) 6 MR. WATTS: And just blow up 7 the top, starting with Mount 8 Sinai. 9 MS. BROWN: Okay. Let's 10 just give him a minute to look at 11 the hardcopy if he wants to. 12 BY MR. WATTS: 13 Q. This is a press release 14 dated June 30, 2022, from Mount Sinai, 15 entitled, "Clinical Neuroscience 16 Fellowship Explores Links Between 17 Pregnancy Exposures and Autism Spectrum 18 Disorder." 19 That's the title, right? 20 A. Mm-hmm. 21 Q. And then if we go down to 22 the first paragraph, we can see a 23 photograph of a gentleman that I think 24 you're familiar with, Vahe Khachadourian.</p>
<p style="text-align: right;">Page 391</p> <p>1 Exhibit 513, Page 24, Line 23, through 2 25, Line 2. 3 BY MR. WATTS: 4 Q. You're on the stand on the 5 afternoon of February 16, 2023, and you 6 are asked about this grant. 7 (Document marked for 8 identification as Exhibit 9 Kolevzon 513.) 10 BY MR. WATTS: 11 Q. Have you talked to Dr. Arora 12 about what he's doing with that 13 \$25 million that he achieved a grant for? 14 A. No, not about the grant. I 15 was aware that he got the grant, as I 16 said. I did not know the grant amount. 17 My focus with Dr. Arora is 18 very sort of narrow as it relates to the 19 teeth study. 20 Q. With this grant he was able 21 to hire people to study the link between 22 the pregnancy exposures and autism 23 spectrum disorder, wasn't he? 24 A. I'm not aware of how he</p>	<p style="text-align: right;">Page 393</p> <p>1 You co-authored the comorbidities paper 2 about autism spectrum disorder with him, 3 right? 4 A. Yes. 5 Q. And he's the -- Mount 6 Sinai's first recipient of National 7 Institute of Mental Health's T32 8 Postdoctoral Research Fellowship, right? 9 A. That's what it says. 10 Q. And the Mount Sinai press 11 release says, "A large body of research 12 suggests that environmental exposures 13 during pregnancy may be associated with 14 autism in offspring," right? 15 A. Yes. The next sentence 16 says, "But those studies barely scratch 17 the surface of the complex task of 18 understanding the cause of autism 19 spectrum disorder." 20 Q. Then it mentions his mentor 21 Magdalena Janecka, who is working on that 22 intricate puzzle, right? 23 A. Yeah, that complex puzzle 24 that we're barely able to scratch the</p>

Page 394

1 surface on.
 2 Q. And if we look at
 3 Exhibit 566.
 4 (Document marked for
 5 identification as Exhibit
 6 Kolevzon 566.)
 7 BY MR. WATTS:
 8 Q. Dr. Janecka is working on
 9 the subject of functional epidemiology.
 10 And the goal of her research "is to
 11 better understand why certain parental
 12 and early-life factors are associated
 13 with the risk of neurodevelopmental
 14 disorders in children," right?
 15 A. I've got to open it up.
 16 MS. BROWN: Let's let him
 17 open it up and look at it.
 18 Oh, my goodness. If you
 19 guys could see the print on this.
 20 MR. WATTS: Guys, just stay
 21 focused on the screen. I realize
 22 it's small.
 23 MS. BROWN: Yeah, I
 24 understand. But just give him a

Page 395

1 minute. Give him a minute.
 2 MR. WATTS: Yeah, just look
 3 at the screen -- I'm giving him a
 4 minute, but look at the screen.
 5 MS. BROWN: Well, okay,
 6 then, I'm going to object.
 7 Because what you have on the
 8 screen is selected, highlighted
 9 parts of an exhibit that you
 10 provided us that you couldn't even
 11 read with a magnifying glass.
 12 So just give him a minute --
 13 MR. WATTS: Overruled.
 14 Let's go.
 15 I am giving him a minute. I
 16 just don't want you talking.
 17 MS. BROWN: And if he wants
 18 to look at the rest of it, he'll
 19 have to ask for you to scroll
 20 down.
 21 MR. WATTS: Look all you
 22 want.
 23 MS. BROWN: Presumably, you
 24 want truthful and accurate

Page 396

1 testimony.
 2 MR. WATTS: I want him
 3 testifying, not you.
 4 MS. BROWN: I'm not
 5 testifying.
 6 MR. WATTS: You know you're
 7 still my buddy, but you need to
 8 kind of let him go.
 9 MS. BROWN: I like you, too.
 10 But I can't read this.
 11 MR. WATTS: You're the one
 12 that wanted paper. I've got a big
 13 screen.
 14 Let's go.
 15 THE WITNESS: Can you repeat
 16 the question?
 17 BY MR. WATTS:
 18 Q. Sure.
 19 Dr. Janecka, working under
 20 the title "Functional Epidemiology," as
 21 part of the functional epidemiology lab
 22 of the Seaver Autism Center at the Icahn
 23 School of Medicine.
 24 Who is the head of the

Page 397

1 Seaver Autism Center?
 2 A. Joseph Buxbaum.
 3 Q. Okay. Have you ever been
 4 the head of it?
 5 A. No.
 6 Q. What is your role at the
 7 Seaver Autism Center?
 8 A. I'm the clinical director.
 9 Q. Okay. And is Joseph Buxbaum
 10 your boss?
 11 A. Yes, one of many.
 12 Q. And so we've got the
 13 functional epidemiology lab at the Seaver
 14 Autism Center. And, "The goal of our
 15 research is to better understand why
 16 certain prenatal and early-life factors
 17 are associated with a risk of
 18 neurodevelopmental disorders in
 19 children," right?
 20 A. So it's very hard for me to
 21 comment on sentences that are lifted from
 22 a web page.
 23 But if you're asking me if
 24 you read the sentences correctly, the

Page 398

1 answer is yes.

2 Q. Is autism spectrum disorder

3 a neurodevelopmental disorder in

4 children?

5 A. As defined by the DSM, yes.

6 Q. Okay. Let's go back to

7 biomarkers for a second. You remember we

8 were talking about teeth and hair to try

9 to get a biomarker showing exposure to

10 environmental agents?

11 A. So we talked about the

12 studies in teeth and hair to show that

13 there are potentially different levels,

14 or different rhythms between levels, that

15 distinguish between autism and not

16 autism.

17 Q. Okay. I want to simplify

18 our discussion on what a biomarker is.

19 Now, this is going to surprise you

20 because I'm the picture of cardiovascular

21 health. But every once in a while, I'll

22 get my blood taken to get a blood screen,

23 right. And you can get all sorts of data

24 with respect to what your levels are on

Page 399

1 different things.

2 Those are biomarkers, right?

3 A. Those are examples of

4 biomarkers, yes.

5 Q. So, you know, for example,

6 hemoglobin A1C is a measure in your blood

7 for a risk of diabetes, right?

8 A. It's a biomarker for

9 diabetes, yes.

10 Q. Blood pressure for heart

11 disease?

12 A. Yes.

13 Q. Cholesterol for heart

14 disease?

15 A. Those are all examples of

16 biomarkers.

17 Q. Okay. And so by analogy,

18 those are examples of biomarkers that, if

19 they are too high, are likely to cause an

20 increased risk of heart disease for my

21 example, right?

22 MS. BROWN: Objection to the

23 incomplete hypothetical.

24 THE WITNESS: So you are

Page 400

1 representing biomarkers that are

2 linked to the cause of a disease

3 that indicate increased risk.

4 That doesn't necessarily mean that

5 there aren't biomarkers that

6 simply identify cases that have

7 already been established.

8 BY MR. WATTS:

9 Q. Okay. Fair enough.

10 So your research is focused

11 on developing biomarkers, among other

12 things, right?

13 A. Yes, I'm very interested in

14 biomarkers.

15 Q. Okay. And I think that one

16 of your prior reports said that you've

17 had approximately \$4.3 million in grant

18 funding as a principal investigator on a

19 variety of different things, including

20 discovering biomarkers for ASD, right?

21 A. Yes.

22 Q. Okay. And I think you

23 described that effort as, we're trying to

24 think about other factors that kind of

Page 401

1 correspond to autism that we can use to

2 predict autism, right?

3 A. Yes, I'm happy to talk more

4 about those.

5 Q. Okay. Now I want to play a

6 video of you at 460.

7 (Document marked for

8 identification as Exhibit

9 Kolevzon 460.)

10 MR. WATTS: And this is the

11 Advances in Autism conference in

12 2017.

13 (Video played.)

14 DR. KOLEVZON: You can't

15 just think about autism as one

16 group. It's really important for

17 us to develop and validate

18 biomarkers. I think that is going

19 to be the key to clinical trial

20 success, as I said.

21 (Video playback ended.)

22 BY MR. WATTS:

23 Q. What you said is true,

24 right?

Page 402

1 A. What I'm talking about
2 there, electrophysiological biomarkers
3 that have nothing whatsoever to do with
4 the etiology or cause of autism.
5 Q. Okay.
6 A. They are measuring autism
7 and, potentially, autism symptoms and a
8 way of identifying subgroups and
9 predicting treatment response.
10 Q. Now, I noticed that last
11 night I got a Supplemental Rule 26(a)
12 disclosure. I don't know whether you
13 know what that means, but it says that
14 you looked at more stuff. Okay?
15 A. Okay.
16 Q. And I think it listed, you
17 know, various reports, the deposition
18 transcripts for the expert depositions that
19 have been taken thus far, and then I
20 think there were three new studies that
21 we'll talk about in a little.
22 You read Dr. Chung's
23 transcript of the deposition taken on the
24 30th of August 2023, the rough

Page 403

1 transcript?
2 A. I read most of it.
3 Q. Okay. Do you remember the
4 discussion about the slide with the
5 concentric circles of genetics and
6 environment?
7 A. I do, yes.
8 Q. Let me put up an example,
9 that Exhibit 568.
10 This is the SPARK and Future
11 of Autism research, April 25, 2023. And
12 go to Page 5.
13 And does this comport with
14 what you were reading in the transcript
15 when we were asking about this slide?
16 MS. BROWN: Objection.
17 Lacks foundation.
18 THE WITNESS: Comport, in a
19 critical piece of the slide, to
20 me, is the implication that
21 genetic factors and environmental
22 factors are roughly equal, which,
23 of course, that's 100 percent not
24 the case, and not consistent with

Page 404

1 her testimony.
2 BY MR. WATTS:
3 Q. I realize it wasn't
4 consistent with her testimony after she
5 got hired in this case.
6 But do you know how many
7 different PowerPoints Dr. Chung has used
8 with the environmental factors circle,
9 the identical side of the genetic
10 factors?
11 MS. BROWN: Well, I object
12 on a number of grounds, including
13 argumentative, and it lacks
14 foundation. It's false, and it
15 misrepresents the testimony and
16 the document.
17 BY MR. WATTS:
18 Q. Go ahead, sir.
19 A. So I'm not aware of how many
20 PowerPoints and exactly what the size of
21 her circles are.
22 But I am aware of the
23 article that she's written and the body
24 of literature that suggest very

Page 405

1 consistently that 80 to 90 percent of
2 autism is genetic in origin.
3 MR. WATTS: Objection.
4 Nonresponsive.
5 MS. BROWN: Objection.
6 BY MR. WATTS:
7 Q. Here's my question. Do you
8 know how many times this slide has been
9 used in her PowerPoints over the last
10 decade?
11 MS. BROWN: How would he
12 possibly know that? I object.
13 MR. WATTS: Object to form.
14 Come on.
15 MS. BROWN: I object to the
16 form.
17 BY MR. WATTS:
18 Q. All right. Now let's go on.
19 You can tell me whether you
20 possibly know that.
21 A. So the size of the circles
22 are irrelevant. But, no, I am not aware
23 of how many times she's presented on this
24 particular slide.

<p style="text-align: right;">Page 406</p> <p>1 Q. So the relevance to me is</p> <p>2 that every time she gives a PowerPoint,</p> <p>3 she gives it to an audience.</p> <p>4 Does that make sense?</p> <p>5 A. That makes sense.</p> <p>6 Q. And every time you use a</p> <p>7 PowerPoint with genetic factors having a</p> <p>8 circle the same size as environmental</p> <p>9 factors, you are communicating messaging</p> <p>10 to your audience that is seeing the</p> <p>11 PowerPoint?</p> <p>12 MS. BROWN: Object. Lacks</p> <p>13 foundation.</p> <p>14 BY MR. WATTS:</p> <p>15 Q. Make sense?</p> <p>16 A. So the intent behind this</p> <p>17 slide is to teach a lay audience, and the</p> <p>18 size of the circles is not what's</p> <p>19 important. It's what comes out of her</p> <p>20 mouth that's important.</p> <p>21 Q. I mean, part of what we're</p> <p>22 doing here is we put the cards on the</p> <p>23 table. Is what comes out of your mouth</p> <p>24 after you are retained as an expert in</p>	<p style="text-align: right;">Page 408</p> <p>1 is adapting her opinions about the</p> <p>2 genetics of autism based on being</p> <p>3 paid, and that is factually</p> <p>4 incorrect, because her opinions</p> <p>5 are based on literature and based</p> <p>6 on decades of research and have</p> <p>7 been consistent since the time</p> <p>8 that she started in this career.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. Do you think it's fair for a</p> <p>11 lawyer like me to probe what people who</p> <p>12 are experts are saying in litigation</p> <p>13 versus saying what they said before</p> <p>14 litigation?</p> <p>15 A. Absolutely.</p> <p>16 Q. Okay. And so, for example,</p> <p>17 if you said something in a book chapter</p> <p>18 before you were hired, that's a</p> <p>19 legitimate area for me to probe, and then</p> <p>20 you can give your reasons for that,</p> <p>21 right?</p> <p>22 MS. BROWN: Objection to the</p> <p>23 form.</p> <p>24 THE WITNESS: I think it's</p>
<p style="text-align: right;">Page 407</p> <p>1 litigation -- you know, there may be some</p> <p>2 secondary bias that is alleged on both</p> <p>3 sides.</p> <p>4 You've read all the</p> <p>5 depositions, right?</p> <p>6 A. No.</p> <p>7 Q. You haven't read my good</p> <p>8 friend Mr. Murdica, before you started</p> <p>9 taking money from plaintiffs' lawyers,</p> <p>10 blah blah blah. Did you see any of that?</p> <p>11 MS. BROWN: Objection to the</p> <p>12 form.</p> <p>13 THE WITNESS: I can tell you</p> <p>14 there were depositions that I</p> <p>15 read.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. Okay. And, then, the point</p> <p>18 is, is that these PowerPoints were given</p> <p>19 before anybody was hired by lawyers in</p> <p>20 this case. Can we agree to that?</p> <p>21 MS. BROWN: Objection.</p> <p>22 Calls for speculation.</p> <p>23 THE WITNESS: I think what</p> <p>24 you're implying is that Dr. Chung</p>	<p style="text-align: right;">Page 409</p> <p>1 legitimate for you to probe and</p> <p>2 ask questions. I just think the</p> <p>3 questions need to be reasonable.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. And it's reasonable to say,</p> <p>6 you know what, I'm looking at a</p> <p>7 PowerPoint slide that an expert for the</p> <p>8 defense has used in 2023, in 2019, in</p> <p>9 2017, in 2014, and communicated to crowd</p> <p>10 after crowd after crowd before she was</p> <p>11 retained as an expert in this case.</p> <p>12 That's a reasonable inquiry,</p> <p>13 don't you think?</p> <p>14 A. No.</p> <p>15 MS. BROWN: Objection to the</p> <p>16 form.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Okay.</p> <p>19 A. I absolutely do not think</p> <p>20 it's reasonable to infer by the size of</p> <p>21 circles what the genetic component of</p> <p>22 autism is.</p> <p>23 Q. Sometimes you can't believe</p> <p>24 your lying eyes, huh?</p>

Page 410

1 MS. BROWN: Objection to the
2 form. It's argumentive.
3 And our realtime has stopped
4 working. Could we just pause to
5 get it fixed?
6 MR. WATTS: Sure.
7 THE WITNESS: I'm sorry. I
8 don't know what -- can you clarify
9 what does it mean?
10 BY MR. WATTS:
11 Q. You've never heard "believe
12 your lying eyes"?
13 A. I think I've heard it. I
14 don't want to assume. Are you calling me
15 a liar?
16 Q. It's a great phrase down in
17 Texas. Don't take offense.
18 MS. BROWN: Can we go off
19 for one second and just get this
20 working?
21 MR. WATTS: Sure. Sure.
22 THE VIDEOGRAPHER: The time
23 right now is 2:19 p.m. We are off
24 the record.

Page 411

1 (Short break.)
2 THE VIDEOGRAPHER: The time
3 right now is 2:27 p.m. Back on
4 the record.
5 (Document marked for
6 identification as Exhibit
7 Kolevzon 504.)
8 BY MR. WATTS:
9 Q. Doctor, I want to switch
10 gears with you and show you Exhibit 504.
11 This was your expert report dated
12 June 3rd of 2022 in the Palmquist versus
13 Hain case. Is that true?
14 A. Yes.
15 Q. And we can see it's in the
16 Southern District of Texas. This is the
17 so-called Galveston matter that we've
18 been discussing, right?
19 A. Okay.
20 Q. And I'd like to take you to
21 Page 32 of that report.
22 And as we look at this
23 report, Section VI has what's called a
24 "Bradford Hill Causation Analysis"?

Page 412

1 A. Yes.
2 Q. And as we look at Page 32,
3 Section A deals with temporality; is that
4 right?
5 A. Yes.
6 Q. Page 33, Section B deals
7 with "Strength of Association"?
8 A. Yes.
9 Q. Page 34, C is "Consistency,"
10 right?
11 A. Yes.
12 Q. D is "Dose Response," right?
13 A. Correct.
14 Q. Page 35, E is "Specificity"?
15 A. Yes.
16 Q. Page 35, F is "Biological
17 Plausibility"?
18 A. Yes.
19 Q. G is "Coherence"?
20 A. Yes.
21 Q. Page 36, H is "Experiment"?
22 A. Yes.
23 Q. And I is "Analogy"; is that
24 right?

Page 413

1 A. Those are all the sections,
2 yeah.
3 Q. Okay. So in those five
4 pages, 32, 33, 34, 35, and 36, you did a
5 Bradford Hill analysis to suggest
6 exposure to heavy metals in baby food
7 could not be causative of autism, right?
8 A. That's what I did for this
9 case, yes.
10 Q. Okay. And there's something
11 you said I want to talk to you about, and
12 that is the idea of temporality.
13 And I -- let me paraphrase.
14 You tell me if I, basically, got it
15 right.
16 And that is that your
17 understanding of autism is that it's
18 conceptualized in utero, even if it's not
19 evident until later on, right?
20 A. Correct.
21 Q. And, therefore, a baby
22 already outside of the uterus ingesting
23 baby food with allegedly too much metals
24 in it failed the test of temporality

<p style="text-align: right;">Page 414</p> <p>1 because the conceptualization of autism 2 was already present, right? 3 A. As it relates to autism, 4 yes. 5 Q. Okay. Now, let's put that 6 aside for a second. And if we go to your 7 report -- you didn't do a 8 section-by-section Bradford Hill analysis 9 of this particular case; is that right? 10 A. So my review of the 11 literature in this particular case did 12 not indicate the need for Bradford Hill. 13 Q. Okay. Fair enough. 14 So the answer is you didn't 15 do one, right? 16 A. I used Bradford Hill 17 framework. 18 Q. But you didn't list them all 19 out and talk about each of them. Is that 20 fair? 21 A. It was very hard to get past 22 the consistency one. 23 Q. Okay. Now, I want to talk 24 to you about temporality, just for a</p>	<p style="text-align: right;">Page 416</p> <p>1 A. Off the top of my head, I'm 2 not. 3 Q. Okay. Let me -- hold on a 4 just second, because I want to be 5 specific about this. 6 If you look at Page 24 of 7 your report, Exhibit 403. 8 And you, in Footnote 50 -- 9 A. We're talking about the 10 Payne report. 11 Q. No, your report in this 12 case. 13 Exhibit 403. Page 24, 14 Footnote 50. 15 For the proposition, 16 "Because it's generally established that 17 altered neurodevelopment in ASD begins in 18 utero, and likely in the first trimester, 19 challenges remain in determining which 20 neurobiological features cause ASD versus 21 which are a consequence." 22 And then Footnote 50 cites 23 to a study by Prem entitled 24 "Dysregulation of Neurite Outgrowth and</p>
<p style="text-align: right;">Page 415</p> <p>1 second, and developmental time tables in 2 utero. Okay? 3 You've testified -- well, 4 you said in your report, Exhibit 403, 5 that it's generally established that 6 altered neurodevelopment in autism 7 spectrum disorder begins in utero and 8 likely in the first trimester; is that 9 right? 10 A. Yes. 11 Q. Does it continue through the 12 second trimester? 13 MS. BROWN: Objection to 14 form. 15 THE WITNESS: So the brain 16 is developing throughout all three 17 trimesters. So the initial insult 18 occurs, as I said, when sperm 19 meets egg, but the manifestations 20 of that insult can certainly occur 21 throughout utero. 22 BY MR. WATTS: 23 Q. Okay. You cited a paper 24 called Prem. Are you familiar with that?</p>	<p style="text-align: right;">Page 417</p> <p>1 Cell Migration in Autism and Other 2 Neurodevelopmental Disorders"? 3 A. Mm-hmm. Yeah. 4 Q. Now, the Prem article I 5 marked as Exhibit 485. 6 (Document marked for 7 identification as Exhibit 8 Kolevzon 485.) 9 BY MR. WATTS: 10 Q. And what I'm going to do -- 11 there's a -- let me just kind of 12 pre-stage what I'm doing. There's a 13 variety of time tables that are listed in 14 Prem. I just want to see if you agree or 15 disagree with those particular time 16 tables. 17 A. All right. It's been a 18 while since -- 19 Q. I mean, you're welcome to 20 read or I can just take you one by one. 21 Whatever you want me to do -- 22 A. Let me take a look at the 23 abstract. 24 Q. Yeah. Yeah, that's fine.</p>

<p style="text-align: right;">Page 418</p> <p>1 That's where I'm going with these 2 particular time tables. 3 A. Okay. 4 Q. Are you ready? 5 A. I am. 6 Q. Okay. First question is, in 7 the overview, about three lines from the 8 bottom, it says, "For ASD, more recent 9 genetic studies have also suggested that 10 risk genes largely confer" -- "converge 11 upon the developing human cerebral cortex 12 between Weeks 8 and 24 in utero." 13 Do you agree with that? 14 A. So this is not an area of my 15 expertise. This is the pathology. 16 Q. Okay. Let's go to 110. 17 The next one. 18 In the middle of the page it 19 says, "During the 8 to 24-week window of 20 human neurodevelopment, neural precursor 21 cells are actively undergoing 22 proliferation, migration, and early 23 differentiation to form the basic 24 cytoarchitecture of the brain."</p>	<p style="text-align: right;">Page 420</p> <p>1 126. "Moreover, the 2 importance of very early cortical 3 development was recently confirmed by the 4 large scale, over 35,000 samples, whole 5 genome sequencing study by, Footnote 167, 6 that shows that 80 percent of 102 7 high-risk autism spectrum disorder genes 8 are expressed in the forebrain by 9 23 weeks gestation and regulate maturing 10 or mature neurons of both excitatory or 11 inhibitory lineages. Thus, while 12 ASD-risk genes may have different roles 13 in the adult brain, a majority of these 14 risk genes seem to play a key role in the 15 regulation of neurodevelopment." 16 With respect to the 23 weeks 17 after gestation with ASD genes being 18 expressed in the forebrain, is that 19 something you agree with or you just 20 don't know? 21 A. I don't know. 22 Q. Okay. Page 135, down at the 23 bottom, and the top of 136. 24 It talks about, "More</p>
<p style="text-align: right;">Page 419</p> <p>1 Agree, disagree, or don't 2 know? 3 A. I generally understand that 4 to be a true statement. 5 Q. Okay. Go to Page 111. 6 "The formation of the neural 7 tube occurs during early gestation in 8 humans, 3 to 4 weeks." 9 Agree or disagree? 10 A. I don't know the answer to 11 that. 12 Q. Okay. Page 112, down at the 13 bottom. 14 "Migration of cortical 15 neurons occurs between E-19 and E-22 in 16 rats, but in humans migration begins at 17 18 weeks postconception and can continue 18 until Week 36, though most cortical 19 neurons are in place by 24 weeks." 20 Agree, disagree, don't know? 21 A. You know, sitting here, I 22 don't know for sure, so I don't want to 23 guess. 24 Q. Okay. Fair enough.</p>	<p style="text-align: right;">Page 421</p> <p>1 recently, with wider use of 'omic' 2 studies and more sophisticated modeling 3 tools, pathway analysis studies of 4 idiopathic and syndrome-associated ASD 5 genes have uncovered their" -- "have 6 uncovered their convergence onto the 7 cerebral cortex of the developing 8 mid-fetal brain (8 to 24 weeks old)." 9 Do you agree with that? 10 A. Again, the timing of all of 11 these events, I'm not comfortable 12 testifying to. 13 Q. Okay. I think the same 14 answer, but let me ask. 15 Interesting -- 16 "Interestingly, in human brain 17 development, it is believed that the 18 first synapses begin to form between 19 20 and 24 weeks of gestation and the peak 20 of synapse formation occurs postnatally." 21 Agree, disagree, or don't 22 know? 23 A. I can't be certain. 24 Q. Okay. And then on Page 136.</p>

<p style="text-align: right;">Page 422</p> <p>1 "Indeed, in the 8 to 24-week 2 period of brain development, we find that 3 NPCs are proliferating, migrating, and 4 differentiating to form the brain." 5 Any thoughts? 6 A. I can't know for sure. 7 Q. Okay. I want to talk to you 8 about the concept of plausible biological 9 mechanisms. 10 And if I could, I want to go 11 back to 494, which is the book chapter. 12 It's in the second edition of the Autism 13 Spectrum Disorder. 14 And you see where it says, 15 "We present plausible biological 16 mechanisms linking the" -- "those risk 17 factors to autism spectrum disorder"? 18 A. I see where it's written. 19 Q. And then there's a list of 20 prenatal exposures and maternal 21 conditions, including antidepressants and 22 depression, additional prenatal exposures 23 and maternal -- additional prenatal 24 exposures and maternal conditions.</p>	<p style="text-align: right;">Page 424</p> <p>1 paternal and maternal age." 2 Is that right? 3 A. And those are a couple of 4 good examples where biological mechanisms 5 are plausible. 6 Q. But they are listed under 7 the presentation of biological plausible 8 mechanisms in the book chapter, right? 9 A. So the book chapter says 10 that they are going to present some 11 biological mechanisms. And then the book 12 chapter lists a whole bunch of different 13 areas but doesn't necessarily imply that 14 each of those areas has a biological 15 mechanism that's plausible. 16 Q. Yeah. Except that it 17 follows, "We present plausible biological 18 mechanisms linking those risk factors to 19 autism spectrum disorder," didn't it? 20 A. It does. But there are not 21 plausible biological mechanisms linking 22 all of those risk factors to autism. 23 Q. As we go back to the Elmo, 24 all of that happened right after you all</p>
<p style="text-align: right;">Page 423</p> <p>1 Gestational diabetes. Maternal high body 2 mass index. Fetal distress and cesarian 3 delivery. Viral and bacterial 4 infections. Acetaminophen. Metals. 5 Folic acid. And air pollution. 6 Were those all listed in the 7 book chapter that carries your name as a 8 co-author in 2022? 9 A. Those were listed, yeah. 10 Q. And then there's a section 11 entitled "Perinatal Risk Factors." 12 Low birth weight. Preterm 13 birth. Fetal growth restriction, being 14 short for gestational age. 15 Were those all listed as 16 prenatal risk factors for autism spectrum 17 disorder? 18 A. So they've all been listed, 19 but they don't all have plausible 20 biological mechanisms. 21 Q. Okay. And then it says, 22 "Parental Risk Factors: advanced maternal 23 age, advanced paternal age, potential 24 etiologic mechanisms of advancing</p>	<p style="text-align: right;">Page 425</p> <p>1 said, "We present biological plausible 2 mechanisms linking these risk factors to 3 autism spectrum disorder," right? 4 A. Well, the fact that the two 5 things occur next to each other in a 6 chapter doesn't mean that one explains 7 the other. 8 Q. Hmmm. Let's go through a 9 few of these and just talk about it for a 10 second. 11 Folic acid reduces the risk 12 of autism spectrum disorder, right? 13 A. No. 14 Q. Let me show you Exhibit 464. 15 This is a newsletter from the Seaver 16 Autism Center where you are the clinical 17 director, right? 18 A. I am. 19 (Document marked for 20 identification as Exhibit 21 Kolvezon 464.) 22 BY MR. WATTS: 23 Q. "Working with collaborators 24 in Israel, and using data from a national</p>

<p style="text-align: right;">Page 426</p> <p>1 healthcare provider, our team examined</p> <p>2 the correlation between intake of folic</p> <p>3 acid and multivitamin supplements with</p> <p>4 the risk of autism spectrum disorder in</p> <p>5 the offspring."</p> <p>6 Did I read that right?</p> <p>7 A. Hold on. I've got to get to</p> <p>8 the actual section.</p> <p>9 Yeah, there's a lower-odds</p> <p>10 ratio of having autism among women who</p> <p>11 took folic acid.</p> <p>12 Q. Okay. And let's look at</p> <p>13 what was said next.</p> <p>14 "Of the 45,300 children in</p> <p>15 the study, 570, or 1.3 percent, received</p> <p>16 a diagnosis of autism spectrum disorder.</p> <p>17 Maternal use of folic acid and</p> <p>18 multivitamin supplements before pregnancy</p> <p>19 was associated with a 61 percent lower</p> <p>20 risk for autism spectrum disorder in</p> <p>21 their children compared with children of</p> <p>22 mothers who did not use the supplements."</p> <p>23 Did I read that right?</p> <p>24 A. You read that right. And</p>	<p style="text-align: right;">Page 428</p> <p>1 results need to be interpreted</p> <p>2 cautiously, because other factors, such</p> <p>3 as lifestyle choices, could play a role."</p> <p>4 Q. Okay. But let's --</p> <p>5 A. More studies should be</p> <p>6 conducted to validate these findings.</p> <p>7 Q. Okay. But let's take it</p> <p>8 step by step.</p> <p>9 First of all, does the</p> <p>10 Seaver Autism Center newsletter in 2018</p> <p>11 say, "Maternal use of supplements during</p> <p>12 pregnancy was also associated with a</p> <p>13 73 percent lower risk for ASD"?</p> <p>14 Did I read that right?</p> <p>15 A. The Seaver Autism Center</p> <p>16 newsletter highlights findings from one</p> <p>17 study.</p> <p>18 Q. Yep. And then --</p> <p>19 A. -- and shows --</p> <p>20 MS. BROWN: Let him finish.</p> <p>21 THE WITNESS: -- this</p> <p>22 result.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. And that happened in 2018,</p>
<p style="text-align: right;">Page 427</p> <p>1 this is a great example of where,</p> <p>2 potentially, there's something else that</p> <p>3 led the mothers to take folic acid in the</p> <p>4 first place that protected them from</p> <p>5 having a child with autism.</p> <p>6 So this finding, in and of</p> <p>7 itself, is not sufficient to say folic</p> <p>8 acid reduces the risk of autism.</p> <p>9 Q. Okay. But Mount Sinai says</p> <p>10 if you take folic acid and multivitamins</p> <p>11 before pregnancy, you've got a 61 percent</p> <p>12 of lower risk of autism spectrum disorder</p> <p>13 in your children, right?</p> <p>14 A. No.</p> <p>15 MS. BROWN: Objection. That</p> <p>16 misstates the document.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Okay. And then the -- it</p> <p>19 says, "Maternal use of supplements during</p> <p>20 pregnancy was also associated with a</p> <p>21 73 percent lower risk of autism spectrum</p> <p>22 disorder," right?</p> <p>23 A. The next sentence, which I</p> <p>24 think is the important one, is that, "The</p>	<p style="text-align: right;">Page 429</p> <p>1 right? That's -- that's when this is</p> <p>2 dated, up in the upper left-hand corner?</p> <p>3 A. Yeah.</p> <p>4 Q. And in February of 2018 in</p> <p>5 the Poston case, did you say taking</p> <p>6 prenatal vitamins is -- things are</p> <p>7 globally good because they reduce risk?</p> <p>8 A. You've got to be more</p> <p>9 specific, sorry.</p> <p>10 MR. WATTS: Sure.</p> <p>11 Exhibit 468, Page 83, 7 through</p> <p>12 20.</p> <p>13 (Document marked for</p> <p>14 identification as Exhibit</p> <p>15 Kolevzon 468.)</p> <p>16 THE WITNESS: Yeah.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Okay.</p> <p>19 A. Right. Just like you don't</p> <p>20 want to smoke during pregnancy. But this</p> <p>21 isn't necessarily related to autism.</p> <p>22 Q. So they -- they -- it</p> <p>23 doesn't have anything to do with autism?</p> <p>24 A. Well, so you want to reduce</p>

Page 430

1 risk factors in general, modifiable risk
2 factors.

3 Just like you don't want to
4 smoke during pregnancy, you also want to
5 take prenatal vitamins. Those things are
6 globally good because they reduce risk --

7 Q. But you talk --

8 A. -- of all kinds of things,
9 including neural tube defects.

10 Q. But you're talking about
11 studies of people with autism.

12 Do you see that there?

13 A. I'm talking, in the first --
14 the first section, in the second part I'm
15 expanding. It's, like, an obvious thing
16 you want to do.

17 Q. Well --

18 A. Right? So on one hand you
19 specifically want to reduce the risk of
20 autism. On the other hand, just like we
21 take prenatal vitamins, you want to
22 reduce the risk of bad outcomes, hard
23 stop.

24 Q. Does the data show that

Page 431

1 taking folic acid before pregnancy
2 reduces the risk of autism?

3 A. There are some studies that
4 show that as an association. I don't
5 think it's definitively determined.

6 Q. By the way, folic acid is
7 Vitamin B, right?

8 A. Yes.

9 Q. Okay. There's other
10 prenatal vitamins that are like
11 Vitamin D, right?

12 A. Correct.

13 Q. Vitamin D levels are low in
14 cases of autism, right?

15 A. So there is some association
16 with levels of Vitamin D or higher -- or
17 higher levels of Vitamin D reduce the
18 risk.

19 Q. So you can supplement
20 Vitamin D to reduce the risk of autism?

21 MS. BROWN: Objection to the
22 form. Misstates testimony.

23 THE WITNESS: Yeah. So what
24 you're -- what you're doing is

Page 432

1 you're taking some isolated
2 findings that are important and
3 worth considering, and you're
4 implying that you then want to
5 make a change in your practice,
6 like take Vitamin D.

7 But we are not at that
8 point, as a field.

9 BY MR. WATTS:

10 Q. It's probably a good idea to
11 take Vitamin D if you want to reduce the
12 risk of autism, right?

13 MS. BROWN: Objection.
14 Asked and answered. Inconsistent.

15 THE WITNESS: I would never
16 tell a patient that if they took
17 Vitamin D during pregnancy, they
18 are going to reduce their risk of
19 autism.

20 BY MR. WATTS:

21 Q. Would you tell a jury in
22 Galveston, Texas, earlier this year,
23 Vitamin D levels are low in autism and
24 you can supplement Vitamin D to reduce

Page 433

1 the risk, that's probably a good idea?

2 A. Yeah.

3 Q. Did you say that, under
4 sworn oath, in Galveston this year?

5 MS. BROWN: Hold on. Hold
6 on. Let him answer.

7 THE WITNESS: If I said
8 that, it was a theoretical
9 proposition based on an isolated
10 finding.

11 BY MR. WATTS:

12 Q. Exhibit 512. Page 109,
13 Lines 13 through 15.

14 (Document marked for
15 identification as Exhibit
16 Kolevzon 512.)

17 BY MR. WATTS:

18 Q. February 16th, morning trial
19 session in Galveston.

20 Is that what you said?

21 MS. BROWN: Can you blow up
22 the question too?

23 THE WITNESS: Yeah, these
24 are all ideas that we have that

<p>Page 434</p> <p>1 are relevant. But nobody is 2 making that recommendation. 3 BY MR. WATTS: 4 Q. But you told a jury that's 5 probably a good idea, right? 6 MS. BROWN: Objection to 7 form. 8 THE WITNESS: You're taking 9 this out of context, Counselor. 10 BY MR. WATTS: 11 Q. Every time I quote your 12 words back to you, you tell me I'm taking 13 it out of context. 14 MS. BROWN: Well, that's not 15 true, but that happens to be what 16 you're doing here. 17 BY MR. WATTS: 18 Q. I feel so bad. 19 A. I'm not saying that you 20 pick -- that you do every time. I'm 21 saying in this particular situation, they 22 are talking in general about modifiable 23 risk factors. I'm giving Vitamin D as an 24 example, if they were low.</p>	<p>Page 436</p> <p>1 framework. This is an idea. 2 Q. Oxytocin. 3 A. Yes. 4 Q. That's a natural hormone 5 that stimulates uterine contractions in 6 childbirth and lactation after 7 childbirth, right? 8 A. Correct. Among other -- 9 many other activities. 10 MR. WATTS: Play Exhibit 470 11 for a second. 12 (Document marked for 13 identification as Exhibit 14 Kolevzon 470.) 15 MS. BROWN: Can you -- 16 BY MR. WATTS: 17 Q. This is a video of you on 18 February the 28th of 2018. 19 (Video played.) 20 DR. KOLEVZON: But, in the 21 meantime, because of all the 22 interest in oxytocin, Dr. Buxbaum 23 and his group, including Hala 24 Harony-Nicolas, used oxytocin in</p>
<p>Page 435</p> <p>1 Q. What's a modifiable risk -- 2 MS. BROWN: Wait, wait. 3 Lets let him finish. 4 BY MR. WATTS: 5 Q. And I'm sorry, I thought you 6 were done. 7 What's a modifiable risk 8 factor? 9 A. So this is an example. If, 10 in fact, we had established that -- so 11 what we know, to some extent, or at least 12 there have been some associations with 13 higher levels of Vitamin D during 14 pregnancy, lower the risk of autism. 15 Right. 16 That doesn't necessarily 17 mean that taking Vitamin D protects you, 18 but if it did mean that, that would be a 19 modifiable risk factor. We'd say we want 20 to make sure that we have your Vitamin D 21 levels high, because we can modify that 22 through diet and supplements, and that 23 would reduce the risk. 24 This is a conceptual</p>	<p>Page 437</p> <p>1 another model systems. So instead 2 of using a mouse model, they 3 created a rat model. Rats have 4 bigger brains. They're a little 5 bit easier to work with, 6 evidently. 7 And they looked at some of 8 the electrophysiological measures. 9 So this is a measure of what's 10 called long-term potentiation. 11 It's basically a proxy of synaptic 12 plasticity. And they looked at 13 the effect of oxytocin on these 14 SHANK3 rats, and they found that, 15 actually, oxytocin reversed the 16 electrophysiological deficits. 17 And that's a really important 18 marker of nerve cell conduction 19 integrity, and we saw that there 20 was essentially a reversal of the 21 deficit. And that was a very 22 exciting initial finding. 23 (Video playback ended.) 24 BY MR. WATTS:</p>

Page 438

1 Q. What is it about oxytocin
2 that achieves a reversal in the deficit?
3 Or do you know?
4 A. So these are rats that are
5 missing a copy of their SHANK3 gene --
6 actually, I think they're homozygous, so
7 they are missing both copies. And there
8 are -- there's some evidence of some
9 oxytocin dysregulation, essentially,
10 based on cellular studies.
11 And, you know, there's an
12 idea that if you try different compounds
13 in the model systems and they work, then
14 that's an easy target for humans.
15 Q. Okay.
16 A. So they did the study, and
17 we did a study in humans.
18 Q. All right. So --
19 A. And it failed.
20 Q. -- if we look at
21 Exhibit 405, which is your CV. On
22 Page 4, we were going through your
23 grants, and you had \$265,000 grant to be
24 a co-investigator to study the neural

Page 439

1 effects to sustained oxytocin treatment
2 on children with autism, right?
3 A. I've had many different
4 grants studying oxytocin.
5 Q. Yeah, including that one?
6 A. Yeah.
7 Q. Okay. Let me play 459,
8 which is a video of you at the Advances
9 in Autism Conference 2017, on
10 November 16th of 2017.
11 (Document marked for
12 identification as Exhibit
13 Kolevzon 459.)
14 (Video played.)
15 DR. KOLEVZON: Many of you
16 have had children who have been
17 assessed for ADHD, and you have a
18 continuous performance test where
19 you are kind of pressing buttons
20 on prompts. That's essentially
21 what this is.
22 So there's a little rat in
23 the chamber. There's these five
24 holes. The holes light up. The

Page 440

1 rat touches the light with their
2 nose, and they get a reward.
3 And what happens is you kind
4 of increase the speed of that,
5 which is a measure of their
6 attention. And you also don't
7 have a light at all, which is a
8 measure of their inhibitory
9 control, right.
10 So obviously the kid that --
11 the kids. The rats with the
12 missing copy or two missing copies
13 of their SHANK3 gene had real
14 deficits in their attention, then
15 you give those rats oxytocin, you
16 rescue those deficits.
17 So now we've identified two
18 critical domains that are
19 consistent with the human
20 phenotype, and we've rescued both
21 of them with oxytocin.
22 So of course, what do you do
23 next? You do a clinical trial
24 with humans.

Page 441

1 (Video playback ended.)
2 BY MR. WATTS:
3 Q. What are the two critical
4 domains that were consistent with the
5 human phenotype?
6 A. In the rats?
7 Q. Mm-hmm.
8 A. In this study, social
9 recognition memory and I think some sort
10 of attention measure.
11 I wasn't listening to
12 myself, but that's what I recall.
13 Q. Probably watching this,
14 saying who is that guy?
15 MS. BROWN: You were
16 distracted by the hair.
17 THE WITNESS: It is
18 nostalgic and sad.
19 BY MR. WATTS:
20 Q. Lets see if we can go back.
21 When you say modifiable risk
22 factors, how many modifiable risk factors
23 have you investigated over the years?
24 A. I can't possibly recall.

Page 442

1 Q. Okay. Let me ask you the
2 next thing in the book chapter that's got
3 your name on it, in March of 2022.
4 Advanced maternal age. It
5 is true as a matter of data that there's
6 an increased risk for autism spectrum
7 disorder with advancing maternal age,
8 right?
9 A. Yes.
10 Q. I think there's been
11 11 published epidemiological studies
12 before controlling for potential
13 confounders and 7 after you control for
14 the confounders, that have all
15 demonstrated a relationship between
16 advanced maternal age, over the age of
17 35, and an increased risk of autism
18 spectrum disorder; is that right?
19 A. I can't attest to exactly
20 the number of studies. But generally
21 it's accepted that advanced maternal age
22 is a risk factor for autism.
23 Q. Yeah. And for example, in
24 our textbook here -- that's where I got

Page 443

1 those, by the way. The 11 studies and
2 7 --
3 A. Mm-hmm.
4 Q. It says, "Summarizing
5 results across studies suggest that older
6 maternal age of mothers is likely to
7 increase risk of autism spectrum disorder
8 by 50 percent after accounting for
9 potential confounders."
10 Is that consistent with your
11 recollection?
12 A. I think that the odds ratio
13 varies depending on the study. So
14 sometimes it's much higher than that.
15 But that's not inconsistent.
16 Q. And then we go to advanced
17 paternal age, and we see that when dad is
18 over the age of 40, you start to see a
19 statistically significant increase in the
20 risk of the child having autism. And
21 it's more than 50 percent after taking
22 into account potential confounders,
23 right?
24 A. Yeah, and I think it's

Page 444

1 important to point out that both of these
2 are occurring through genetic mechanisms.
3 Q. We're going to get to that
4 in a second.
5 After dad's over the age of
6 50, the increased risk of autism spectrum
7 disorder in offspring is more than
8 100 percent after potential confounders
9 are taken into account. Isn't that
10 right?
11 A. Again, I can't attest to the
12 exact odds ratios. But it's commonly
13 accepted that advanced paternal age and
14 advanced maternal age are significant
15 risk factors for autism.
16 Q. Okay. And I'll represent to
17 you everything I just said came out of
18 this book, okay?
19 A. That's the book that I
20 didn't write.
21 Q. But the one that's got your
22 name on it?
23 A. It does, but I can't --
24 Q. By the way, let me just ask

Page 445

1 you. Do you really believe in your heart
2 of hearts that if I put a subpoena on you
3 and on Hollander and your co-authors,
4 that there's not going to be e-mails back
5 and forth to you with respect to this
6 book chapter at all?
7 A. Oh, there -- there will be.
8 Q. Okay.
9 A. Yeah.
10 Q. Drafts?
11 A. No drafts.
12 Q. No redlines, nothing like
13 that?
14 A. No. If I had seen
15 acetaminophen in a draft, I would have
16 deleted it.
17 Q. Well, I don't know. You
18 published this before you were asked to
19 look at acetaminophen, didn't -- weren't
20 you?
21 MS. BROWN: I object to the
22 form of the question.
23 THE WITNESS: Again, you're
24 implying that I'm biased.

<p style="text-align: right;">Page 446</p> <p>1 BY MR. WATTS:</p> <p>2 Q. Well, what I'm implying --</p> <p>3 MS. BROWN: Let him finish.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. What I'm implying is that</p> <p>6 before March of 2022 and every study</p> <p>7 you'd ever done, the word "acetaminophen"</p> <p>8 was never once used.</p> <p>9 A. Right.</p> <p>10 Q. And then the first time that</p> <p>11 your name ends up on a published article,</p> <p>12 it has a section about how acetaminophen</p> <p>13 plays a role in autism spectrum disorder.</p> <p>14 MS. BROWN: That doesn't</p> <p>15 even make sense. I object.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. Is there any other</p> <p>18 publication where you talk about</p> <p>19 acetaminophen, consciously or</p> <p>20 unconsciously, before you became a</p> <p>21 lawyer -- I mean before you became an</p> <p>22 expert witness in a litigation?</p> <p>23 MS. BROWN: Object to the</p> <p>24 form.</p>	<p style="text-align: right;">Page 448</p> <p>1 MR. WATTS: Well, get ready</p> <p>2 for it at trial.</p> <p>3 THE WITNESS: Right. So I'd</p> <p>4 like to just address that for a</p> <p>5 moment, which is --</p> <p>6 MS. BROWN: Go ahead.</p> <p>7 Because there was a question --</p> <p>8 MR. WATTS: Let's wait on</p> <p>9 that for just a second. Because</p> <p>10 I'm going to ask you about those</p> <p>11 stuff.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Let me just ask you this.</p> <p>14 If you think, down on a</p> <p>15 common-sense level, what is it about the</p> <p>16 advancing age of mom and dad that</p> <p>17 increases the risk of genetic disruption</p> <p>18 in a child?</p> <p>19 A. So as women age, they</p> <p>20 produce a finite number of eggs, and</p> <p>21 those eggs become more susceptible to</p> <p>22 damage.</p> <p>23 Q. And why is that?</p> <p>24 A. Because as we age,</p>
<p style="text-align: right;">Page 447</p> <p>1 THE WITNESS: I think what</p> <p>2 you've pointed out is that none of</p> <p>3 the literature that I've ever</p> <p>4 published has the word</p> <p>5 "acetaminophen" in it.</p> <p>6 And my point is that if I</p> <p>7 had gotten a chance to review this</p> <p>8 chapter, I probably wouldn't have</p> <p>9 put acetaminophen in this either,</p> <p>10 regardless of whether I had been</p> <p>11 working on this case or not.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Well, that's not what you</p> <p>14 suggested in Tillery when you were his</p> <p>15 guy.</p> <p>16 A. What did I --</p> <p>17 MS. BROWN: Whoa, whoa,</p> <p>18 whoa.</p> <p>19 BY MR. WATTS:</p> <p>20 Q. I'm happy to consult with</p> <p>21 your Mr. Tillery --</p> <p>22 MS. BROWN: Timeout,</p> <p>23 friends. I object to that</p> <p>24 question as argumentive.</p>	<p style="text-align: right;">Page 449</p> <p>1 everything becomes more susceptible to</p> <p>2 damage.</p> <p>3 Q. Just look at me.</p> <p>4 A. Exactly.</p> <p>5 Q. Okay.</p> <p>6 A. Strike that "exactly" part.</p> <p>7 MS. BROWN: No, don't strike</p> <p>8 it.</p> <p>9 BY MR. WATTS:</p> <p>10 Q. Let me ask you this --</p> <p>11 A. Hold on, let me finish.</p> <p>12 Q. Yeah, go ahead.</p> <p>13 A. In the dads, it's a little</p> <p>14 bit of a different mechanism, where dads</p> <p>15 are always making new sperm. But the</p> <p>16 mechanism to reproduce sperm becomes</p> <p>17 faulty, again, with age. Like as your</p> <p>18 cars age, the engine starts to break</p> <p>19 down.</p> <p>20 Q. Okay.</p> <p>21 A. And so those are examples of</p> <p>22 heritable genetic factors, essentially</p> <p>23 passed on from parent to child, but the</p> <p>24 parent isn't affected, so it's not,</p>

Page 450

1 strictly speaking, inherited, but it's
 2 still embedded within the genetics.
 3 Q. Have you ever heard the
 4 phrase "pack-years" in dealing with
 5 epidemiology with smoking?
 6 A. Pack-years?
 7 Q. Yeah.
 8 A. No.
 9 Q. I mean, I think the concept
 10 is --
 11 A. Oh, yes, no. I have, I
 12 have.
 13 Q. -- if you smoke for a little
 14 bit, it's not enough to --
 15 A. Yeah, five years, five
 16 cigarettes is -- yeah, 25-year pack --
 17 Q. Yeah. So with respect to
 18 environmental exposures, the longer one
 19 is exposed the greater their exposure
 20 will be, all other things being equal?
 21 MS. BROWN: Object to the
 22 form. Lacks foundation.
 23 THE WITNESS: It depends.
 24 BY MR. WATTS:

Page 451

1 Q. Sorry?
 2 A. It depends.
 3 Q. Okay. If somebody is
 4 50 years old and is subjected to a
 5 steady-state exposure of a chemical, they
 6 are going to have greater exposure at 50
 7 than they would at 40, all other things
 8 being equal, right?
 9 MS. BROWN: Object. Lacks
 10 foundation.
 11 THE WITNESS: Depends.
 12 BY MR. WATTS:
 13 Q. Okay. When asked to explain
 14 paternal and maternal age effects, the
 15 older you get, there is an increased
 16 occurrence of spontaneous genomic
 17 alterations, right?
 18 A. That's the idea, yes.
 19 Q. In addition to that, the
 20 older parents are, the higher number of
 21 premature and low-birth-weight babies
 22 surviving this, right?
 23 A. I do think that there is a
 24 correlation between older maternal and

Page 452

1 paternal age and preterm birth, yes.
 2 Q. I'm just reading from
 3 Chapter 11 of your book chapter in the
 4 second Textbook of Autism Spectrum
 5 Disorder.
 6 So is it true or not? Is
 7 this another one where Kapra wrote
 8 something you wouldn't have signed off on
 9 if you'd wrote the chapter with your name
 10 on it?
 11 MS. BROWN: Objection to the
 12 form.
 13 THE WITNESS: So, again, I
 14 think that there's a correlation
 15 there. So it is a reasonable
 16 thing to say.
 17 This is an example where
 18 there is actually a mechanism,
 19 right.
 20 BY MR. WATTS:
 21 Q. Okay. Low birth weight or
 22 fetal malnutrition is a major contributor
 23 of intellectual disability, which is
 24 commonly associated with autism spectrum

Page 453

1 disorder, right?
 2 A. So I am not prepared to
 3 testify about all the different causes of
 4 intellectual disability.
 5 Q. Were you prepared to testify
 6 it in your report in the Daniels-Feasel
 7 case, Page 21 of 94, on November 8, 2018?
 8 A. I may or may not have been.
 9 But as I'm sitting here today, I haven't
 10 investigated this.
 11 Q. Well, let's see where you --
 12 let's see where you are in November of
 13 2018.
 14 MR. WATTS: Page 21 of 94 of
 15 Exhibit 479.
 16 BY MR. WATTS:
 17 Q. Environmental factors --
 18 MR. WATTS: Page 21 -- I'm
 19 sorry. Oh, you know what, 21 of
 20 94. Sorry. You're right. Go
 21 back up.
 22 Paragraph 7-A.
 23 I think you're on the wrong
 24 page, Bud. There we go.

<p style="text-align: right;">Page 454</p> <p>1 BY MR. WATTS:</p> <p>2 Q. In your expert report in the</p> <p>3 Daniels-Feasel case, did you write that,</p> <p>4 "Environmental factors (e.g., maternal</p> <p>5 alcohol abuse during gestation,</p> <p>6 infections, birth complications, and</p> <p>7 malnutrition) are major contributors of</p> <p>8 intellectual disability which is commonly</p> <p>9 associated with autism spectrum</p> <p>10 disorder"?</p> <p>11 A. I did write that, yes.</p> <p>12 Q. And after you wrote that in</p> <p>13 2018, you were aware of studies showing</p> <p>14 that the estimated prevalence for autism</p> <p>15 spectrum disorder diagnosis was about</p> <p>16 five times greater if the baby was of low</p> <p>17 birth weight, right?</p> <p>18 MS. BROWN: Objection.</p> <p>19 Lacks foundation.</p> <p>20 THE WITNESS: Can you repeat</p> <p>21 that?</p> <p>22 (Document marked for</p> <p>23 identification as Exhibit</p> <p>24 Kolevzon 532.)</p>	<p style="text-align: right;">Page 456</p> <p>1 MR. WATTS: Pull out the</p> <p>2 conclusions.</p> <p>3 MS. BROWN: Well, let's just</p> <p>4 give him a minute to read the</p> <p>5 article.</p> <p>6 BY MR. WATTS:</p> <p>7 Q. Hold up.</p> <p>8 Have you seen this before?</p> <p>9 A. This is familiar, but I</p> <p>10 don't remember the details of it.</p> <p>11 Q. Okay. We'll go to the</p> <p>12 conclusions on 16 to 20. It says, "The</p> <p>13 estimated prevalence of ASD diagnoses in</p> <p>14 this LBW cohort", I assume that's low</p> <p>15 birth weight cohort?</p> <p>16 A. Yes.</p> <p>17 Q. -- "was five times the</p> <p>18 prevalence reported by the Centers of</p> <p>19 Disease Control and Prevention for</p> <p>20 eight-year-olds in the general U.S.</p> <p>21 population in 2006. The prospective</p> <p>22 study, using rigorous diagnostic</p> <p>23 procedures, confirms that the rate of ASD</p> <p>24 is elevated among low birth</p>
<p style="text-align: right;">Page 455</p> <p>1 BY MR. WATTS:</p> <p>2 Q. Sure.</p> <p>3 Let me show you Exhibit 532,</p> <p>4 which is a study by Pinto-Martin.</p> <p>5 Did you read Dr. Powell's</p> <p>6 deposition?</p> <p>7 A. Bits and pieces of it.</p> <p>8 Q. Did you hear the classic</p> <p>9 part where he called Pinto-Martin,</p> <p>10 Mr. Pinto-Martin?</p> <p>11 A. I did.</p> <p>12 Q. And Baccarelli,</p> <p>13 Mrs. Baccarelli?</p> <p>14 A. I did.</p> <p>15 Q. Okay. Well, assuming it's</p> <p>16 Mrs. Jennifer Pinto-Martin, she is the</p> <p>17 first author of "Prevalence of Autism</p> <p>18 Spectrum Disorder in Adolescents Born</p> <p>19 Weighing Less Than 2,000 Grams,"</p> <p>20 published November 2011 in Pediatrics.</p> <p>21 If we go to Page 16 of 20 --</p> <p>22 A. Hold on. Let me just read</p> <p>23 it.</p> <p>24 Q. Okay.</p>	<p style="text-align: right;">Page 457</p> <p>1 weight/preterm survivors."</p> <p>2 Did I read that right?</p> <p>3 A. I think extreme low birth</p> <p>4 weight is a clear risk factor for autism.</p> <p>5 And I think that --</p> <p>6 Q. Why?</p> <p>7 A. Why is it higher than the</p> <p>8 CDC?</p> <p>9 Q. Why is it a risk factor for</p> <p>10 autism?</p> <p>11 A. It's just been shown in</p> <p>12 studies -- I don't know exactly what the</p> <p>13 mechanism is.</p> <p>14 Q. Okay. So you don't know why</p> <p>15 it's true, you just know that,</p> <p>16 statistically, it is true?</p> <p>17 A. It's one of the commonly</p> <p>18 accepted risk factors in the scientific</p> <p>19 community. I don't think it's a causal</p> <p>20 factor.</p> <p>21 It could be acting by virtue</p> <p>22 of preterm birth. It could be acting by</p> <p>23 genetic susceptibility.</p> <p>24 But the reason why it's</p>

Page 458

1 different than the CDC studies is because
 2 the CDC studies include lots of kids who
 3 don't have autism.
 4 But I'm speculating.
 5 Q. So in the book chapter from
 6 last year, Exhibit 494, with your name on
 7 it, it says, "Low birth weight defined as
 8 birth weight below 2500 grams, 5 pounds
 9 8 ounces, is considered to be a marker
 10 for newborns at high risk for later
 11 neurological, psychiatric, and
 12 neuropsychological problems."
 13 Do you agree with that?
 14 A. Broadly speaking, that's
 15 true.
 16 Q. Okay. Preterm birth. In
 17 the same book chapter you all cite
 18 Persson 2020.
 19 Says, "Finding the relative
 20 risk of autism spectrum disorder
 21 increased weekly as the date of delivery
 22 diverged from 40 weeks."
 23 Do you know why that would
 24 be true?

Page 459

1 A. I'd have to look at this
 2 reference to better understand it.
 3 Q. Anything off the top of your
 4 head just make sense as to why ASD would
 5 go higher the farther you are away from
 6 40 weeks?
 7 MS. BROWN: Objection to the
 8 form.
 9 THE WITNESS: I'm not sure I
 10 understand the question.
 11 BY MR. WATTS:
 12 Q. Okay. In your paper with
 13 Viktorin. Environmental factors that are
 14 implicated as affecting fetal
 15 development, such as uncontrolled
 16 diabetes, results in an increased risk,
 17 right?
 18 A. Again, we'd have to pull the
 19 paper. Shall we have that exhibit again?
 20 You're quoting the Viktorin
 21 paper?
 22 Q. Let's use the Katz paper for
 23 this one. Exhibit 491. Page 7, please.
 24 BY MR. WATTS:

Page 460

1 Q. And I should say the
 2 Katz/Kolevzon paper, right? You were a
 3 co-author?
 4 A. I was. I think we looked at
 5 this one already. Hold on.
 6 Q. By the way, did Ms. Katz
 7 tell you that she was going to put your
 8 name on this book chapter -- I mean, this
 9 paper?
 10 A. Is that a serious question?
 11 Q. Probably halfway so.
 12 By the way, you brought up a
 13 good point. You are the last author.
 14 Tell me the relationship between the last
 15 author and the first, and the people in
 16 the middle.
 17 A. So --
 18 Q. Just generally, I mean, I
 19 understand there's variations.
 20 A. Yeah. Generally speaking,
 21 the first author is the person who wrote
 22 it, or maybe the second author is the
 23 person who wrote it. The last author
 24 tends to be the senior author.

Page 461

1 MS. BROWN: Here it is.
 2 BY MR. WATTS:
 3 Q. What does that mean to be
 4 the senior author?
 5 A. Senior author is the person
 6 who kind of organizes the effort, mentors
 7 the person who writes the first --
 8 usually the first or second author.
 9 Q. The older you get, the more
 10 hair that you lose, you kind of get --
 11 get to the back as a senior author in
 12 the -- how does that work?
 13 A. So, I mean, Avi and I are
 14 both equally senior.
 15 Q. Yeah.
 16 A. It happens to be that Julia
 17 was a resident of mine, and so I kind of
 18 assumed responsibility for the whole
 19 effort. And Avi was more of a guiding
 20 consultant.
 21 Q. Okay. Is the first author
 22 usually junior to the last author?
 23 A. No. I think it depends on
 24 the type of study. I put myself as first

<p style="text-align: right;">Page 462</p> <p>1 authors on very -- you know, studies that</p> <p>2 I think are really important, that I want</p> <p>3 to make sure that I'm the first author</p> <p>4 on.</p> <p>5 Q. All right. Okay. And tell</p> <p>6 me what you said about the second author,</p> <p>7 usually writing it, or something?</p> <p>8 A. Well, so sometimes there's a</p> <p>9 first author who sort of acts as lead,</p> <p>10 but the second author does the most --</p> <p>11 most of the writing.</p> <p>12 Q. Okay. Okay.</p> <p>13 A. In the case of my</p> <p>14 Chapter 11, I was asked, just to clarify,</p> <p>15 whether I wanted to be on the chapter.</p> <p>16 So it wasn't that Raz put me on the</p> <p>17 chapter without asking me. He did ask</p> <p>18 me.</p> <p>19 Q. Okay.</p> <p>20 A. It's just that I was unaware</p> <p>21 of the contents of the chapter, and I</p> <p>22 neglected, as an oversight, to read it</p> <p>23 carefully.</p> <p>24 Q. Okay. Fair enough.</p>	<p style="text-align: right;">Page 464</p> <p>1 they were putting me on as a courtesy.</p> <p>2 So I said thank you very much.</p> <p>3 Q. Okay. Avi being</p> <p>4 Reichenberg?</p> <p>5 A. Yes.</p> <p>6 Q. I'm told that he's in poor</p> <p>7 health right now; is that true?</p> <p>8 A. Avi is doing well.</p> <p>9 Q. Good. Okay. I'll leave it</p> <p>10 there. I'm not trying to dig in.</p> <p>11 A. Yeah.</p> <p>12 Q. I heard that earlier this</p> <p>13 week, and it kind of bummed me out.</p> <p>14 A. You know Avi.</p> <p>15 Q. I know of his work. I don't</p> <p>16 know him personally.</p> <p>17 Okay. Let's keep going.</p> <p>18 The Katz paper, 491, we</p> <p>19 talked about the pregestational diabetes.</p> <p>20 You see the overall increased risk varied</p> <p>21 from 1.39 to 1.65.</p> <p>22 Do you see that?</p> <p>23 A. Yeah, I do. But, again,</p> <p>24 this is important not to take out of</p>
<p style="text-align: right;">Page 463</p> <p>1 So to get back to my point.</p> <p>2 And I think you've just obviated the need</p> <p>3 for it. If I were to subpoena all the</p> <p>4 e-mails, you would have been copied on</p> <p>5 this stuff, but it was an oversight by</p> <p>6 you, not having seen it. You didn't look</p> <p>7 at it close enough, is what you're</p> <p>8 saying.</p> <p>9 Is that fair?</p> <p>10 MS. BROWN: Objection to</p> <p>11 form.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Go ahead.</p> <p>14 A. So now I'm speculating based</p> <p>15 on memory. But I suspect that there</p> <p>16 would have been an e-mail saying, hey, do</p> <p>17 you want to be on this chapter, we're</p> <p>18 updating the first textbook chapter. And</p> <p>19 I just said -- probably said sure. And</p> <p>20 then that was probably it. Or maybe, oh,</p> <p>21 we submitted it, is that cool. And I was</p> <p>22 like, oh, yeah, that's great. Figuring</p> <p>23 that I trust Avi and I trust Raz, and we</p> <p>24 were updating an existing chapter, and</p>	<p style="text-align: right;">Page 465</p> <p>1 context. Because I think the question of</p> <p>2 consistency and strength of association</p> <p>3 is especially important in this review.</p> <p>4 Q. Yeah. And in the review</p> <p>5 that was done in the book chapter, it</p> <p>6 talks about diabetes as a risk factor,</p> <p>7 right?</p> <p>8 A. I'm sure there's some of</p> <p>9 that out there. Although this paper</p> <p>10 likely reflects a more updated review of</p> <p>11 the literature than that chapter.</p> <p>12 Q. Okay. High maternal BMI.</p> <p>13 BMI is associated with a higher risk of</p> <p>14 autism spectrum disorder, right?</p> <p>15 A. So, again, there are</p> <p>16 probably some isolated studies that show</p> <p>17 that. But they may not be consistent</p> <p>18 enough. So I need to look at this paper</p> <p>19 more carefully and then we can talk about</p> <p>20 the results.</p> <p>21 Q. Well, in the Katz paper on</p> <p>22 Page 7, is part of what you all say, "BMI</p> <p>23 was associated with a higher risk of ASD</p> <p>24 irrespective of other insulin-resistant</p>

Page 466

1 conditions."

2 It's on the screen if you

3 want to see where it is.

4 A. So I think the findings from

5 this paper reflect that the only

6 significant associated factor among the

7 ones that we examined were preeclampsia,

8 and other ones showed some association

9 but probably were not consistent enough

10 or didn't show strength of association

11 and that we thought were just sort of

12 warranting further study.

13 Q. Okay. Can high maternal BMI

14 lead to inflammation?

15 MS. BROWN: Objection to the

16 form. Overbroad.

17 THE WITNESS: So that's very

18 broad.

19 What do you mean by

20 inflammation?

21 BY MR. WATTS:

22 Q. What do you mean by

23 inflammation?

24 A. You're asking me about

Page 467

1 inflammation?

2 Q. Yeah.

3 A. Inflammation, where, in the

4 brain?

5 Q. Well, I'm just asking

6 generally, first of all, and then we'll

7 get to what you've said about

8 inflammation.

9 A. Yeah.

10 Q. Can high maternal BMI lead

11 to inflammation during fetal development?

12 A. I don't know. Maybe.

13 Q. Okay. What about excessive

14 gestational weight gain?

15 A. There have been some

16 associations. I don't know that it's

17 commonly accepted as a risk factor for

18 autism.

19 Q. Does preeclampsia -- that's

20 high blood pressure, right?

21 A. Preeclampsia is high blood

22 pressure during pregnancy. And I think,

23 yes, there have been more studies and

24 more sort of stronger associations there.

Page 468

1 Q. Between preeclampsia and

2 inflammation during fetal development?

3 A. No. Between preeclampsia

4 and autism.

5 Q. Okay.

6 A. So as a risk factor for

7 autism.

8 Q. Okay. But let me get back

9 to my question if that's fine. I hope

10 you've found it.

11 But does preeclampsia have a

12 role in causing inflammation during fetal

13 development?

14 MS. BROWN: Objection to the

15 form.

16 THE WITNESS:

17 Hypothetically.

18 BY MR. WATTS:

19 Q. Okay. Is it hypothetically

20 in a way that you've written that?

21 A. Let's go and see what I've

22 written and decide.

23 Q. Let's go on to maternal

24 infection first so I can stay on my word

Page 469

1 and then we'll get to preeclampsia.

2 A. Okay.

3 Q. Maternal infection. Does

4 infection lead to inflammation?

5 A. So it depends.

6 Q. On what?

7 A. On the nature of the

8 infection. The location of the

9 infection.

10 Q. Okay. What is it about

11 infectious agents and prenatal infections

12 that causes an increase in the risk of

13 autism spectrum disorder?

14 MS. BROWN: Objection to the

15 form.

16 THE WITNESS: So there's

17 many different possibilities. I

18 don't think any have been

19 established.

20 BY MR. WATTS:

21 Q. Well, let me look at

22 Page 191 of the book chapter. And this

23 is under Viral and Bacterial Infections.

24 MR. WATTS: 494, please.

<p style="text-align: right;">Page 470</p> <p>1 Page 191.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. It says, "A recent</p> <p>4 meta-analysis demonstrated a</p> <p>5 statistically significant association of</p> <p>6 maternal infection/fever with ASD in</p> <p>7 offspring, odds ratio 1.32,</p> <p>8 95th percentile, CI 1.20 to 1.46. Citing</p> <p>9 Tioleco at 2021.</p> <p>10 "Although casualty has not</p> <p>11 been firmly established, these findings</p> <p>12 suggest maternal infection during</p> <p>13 pregnancy confers an increased risk for</p> <p>14 autism spectrum disorder in offspring."</p> <p>15 And my question is, what is</p> <p>16 it about maternal infection that, as a</p> <p>17 clinician, makes sense to you as causing</p> <p>18 increased risk of autism spectrum</p> <p>19 disorder?</p> <p>20 MS. BROWN: Objection to the</p> <p>21 form of the question.</p> <p>22 THE WITNESS: I think I</p> <p>23 answered this in saying that there</p> <p>24 are probably many different</p>	<p style="text-align: right;">Page 472</p> <p>1 Page 157, Lines 3 through 6.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. That's something you</p> <p>4 testified to on August 4th of 2020; is</p> <p>5 that right?</p> <p>6 A. That's correct.</p> <p>7 Q. Okay. Now, is preeclampsia</p> <p>8 a serious blood pressure condition?</p> <p>9 A. I'm not sure I would be</p> <p>10 qualified to gauge whether it's serious</p> <p>11 or not. But preeclampsia is definitely a</p> <p>12 blood pressure condition.</p> <p>13 Q. In Exhibit 491, Page 9, you</p> <p>14 and Ms. Katz write in your article that,</p> <p>15 "Preeclampsia contributes to an increase</p> <p>16 in the circulation of proinflammatory</p> <p>17 cytokines, such as the IL-6 and CRP,</p> <p>18 which can impact the development of</p> <p>19 neurotransmitter pathways in the</p> <p>20 developing fetus."</p> <p>21 True?</p> <p>22 A. So this is certainly a</p> <p>23 compelling hypothetical mechanism.</p> <p>24 Q. Okay. And it's compelling</p>
<p style="text-align: right;">Page 471</p> <p>1 hypothetical reasons why maternal</p> <p>2 infection might increase the risk.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. Have you studied why?</p> <p>5 A. I have not studied why.</p> <p>6 Q. Okay. You just know that it</p> <p>7 increases the risk?</p> <p>8 A. I know that there are some</p> <p>9 studies that show an association.</p> <p>10 Q. Okay. Congenital rubella</p> <p>11 syndrome. That results with -- from a</p> <p>12 maternal infection with rubella during</p> <p>13 pregnancy, right?</p> <p>14 A. Yes.</p> <p>15 Q. It's pretty well accepted to</p> <p>16 cause autism in the offspring, right?</p> <p>17 A. So based on very small</p> <p>18 studies, that has been reproduced in the</p> <p>19 literature, that people consider</p> <p>20 congenital rubella to cause autism.</p> <p>21 Q. Let me show you your</p> <p>22 testimony in the Purdie versus Mercy</p> <p>23 Medical case.</p> <p>24 MR. WATTS: Exhibit 486,</p>	<p style="text-align: right;">Page 473</p> <p>1 because you and Ms. Katz wrote that</p> <p>2 general -- or, "Gestational hypertension</p> <p>3 and preeclampsia are consistently found</p> <p>4 to be associated with an increased risk</p> <p>5 of autism spectrum disorder in</p> <p>6 offspring," right?</p> <p>7 A. So I think the results of</p> <p>8 Dr. Katz's review suggest that, among the</p> <p>9 various factors that she looked at,</p> <p>10 preeclampsia came up more consistently</p> <p>11 and stronger than most of the others.</p> <p>12 Q. And if we go to Page 9, "The</p> <p>13 most consistent association across</p> <p>14 studies was observed for preeclampsia and</p> <p>15 autism spectrum disorder. This is</p> <p>16 further supported by a sibling analysis</p> <p>17 suggesting limiting" -- "limited familial</p> <p>18 confounding factors," right?</p> <p>19 A. That's what Dr. Katz has</p> <p>20 written, yes.</p> <p>21 Q. And on Page 10, you all</p> <p>22 concluded, "Current evidence from</p> <p>23 large-scale, population-based</p> <p>24 epidemiological studies support an</p>

Page 474

1 association between preeclampsia and
 2 autism spectrum disorder," right?
 3 A. So there is an association
 4 that's --
 5 Q. Is that an environmental
 6 cause of autism?
 7 A. So you're sort of moving
 8 quickly to this idea of cause.
 9 Q. Is it an environmental
 10 association?
 11 MS. BROWN: Well, let him --
 12 let him finish.
 13 THE WITNESS: So I said
 14 association. You said cause.
 15 BY MR. WATTS:
 16 Q. I'll take association.
 17 Is it a environmentally
 18 induced association between preeclampsia
 19 and autism spectrum disorder?
 20 MS. BROWN: Objection to the
 21 form.
 22 THE WITNESS: So it's a
 23 intrauterine environment. I would
 24 think that's true, yes.

Page 475

1 BY MR. WATTS:
 2 Q. Okay. What is it about
 3 maternal smoking that leads to an
 4 increased risk of autism spectrum
 5 disorder?
 6 MS. BROWN: Objection to the
 7 form. Lacks foundation.
 8 THE WITNESS: So I think
 9 there's probably many different
 10 factors that one could theorize.
 11 BY MR. WATTS:
 12 Q. Go ahead.
 13 A. So oxygen deprivation, for
 14 one.
 15 Q. What does oxygen deprivation
 16 mean?
 17 A. It means the tissues in the
 18 body are not receiving enough oxygen.
 19 Q. And why would that lead to
 20 autism spectrum disorder?
 21 A. I didn't say it would lead
 22 to autism spectrum disorder.
 23 Q. What is it about oxygen
 24 deprivation in the tissues that makes

Page 476

1 sense to you as playing a role?
 2 A. I don't think a role has
 3 been established. And I don't think that
 4 we know what the mechanism is.
 5 Q. Is it mechanism of action?
 6 What are you comfortable saying about it?
 7 MS. BROWN: Objection to the
 8 form of the question. Calls for
 9 speculation.
 10 THE WITNESS: What am I
 11 comfortable saying about what
 12 exactly?
 13 BY MR. WATTS:
 14 Q. Well, I asked you why
 15 maternal smoking increases the risk of
 16 ASD. You said oxygen deprivation in the
 17 tissues.
 18 MS. BROWN: I object --
 19 object to that.
 20 BY MR. WATTS:
 21 Q. And I'm asking what is it
 22 about oxygen deprivation that makes sense
 23 to you, as a clinician, could play a role
 24 in ASD?

Page 477

1 A. Yeah, so --
 2 MS. BROWN: Objection.
 3 Lacks foundation.
 4 Go ahead.
 5 THE WITNESS: So -- yeah, I
 6 think you're mischaracterizing
 7 what I said.
 8 What I said is there are
 9 probably many different potential
 10 reasons, hypothetically, why
 11 smoking could be associated with
 12 autism. And none of those
 13 scenarios would somebody say that
 14 smoking causes autism.
 15 But among them, if I'm
 16 speculating, oxygen deprivation
 17 is, you know, probably not very
 18 good for brain tissue and so can
 19 lead to global problems,
 20 hypoxia-related problems, that
 21 theoretically, hypothetically,
 22 could be related to an increased
 23 risk of autism.
 24 BY MR. WATTS:

Page 478

1 Q. You mentioned hypoxia. What
2 does that mean?

3 A. Just low oxygen.

4 Q. Okay. In the same way
5 oxygen deprivation, you said, could play
6 a role, hypoxia could play a role?

7 MS. BROWN: Objection.
8 Calls for speculation.

9 THE WITNESS: I'm sort of --
10 I'm using those things kind of
11 synonymously.

12 BY MR. WATTS:

13 Q. Kind of as an analogy?

14 A. No. As synonyms.

15 Q. Okay. What other things can
16 cause oxygen deprivation?

17 A. I don't want to speculate.

18 MS. BROWN: Objection.
19 Calls for speculation.

20 BY MR. WATTS:

21 Q. How does oxygen deprivation
22 differ from oxidative stress?

23 MS. BROWN: Objection.
24 Lacks foundation.

Page 479

1 THE WITNESS: So they are
2 different concepts.

3 BY MR. WATTS:

4 Q. What is oxidative stress?

5 A. So it's lots of different
6 things. I'm definitely not an expert in
7 oxidative stress. I'm not sure I'm
8 comfortable with providing testimony
9 about that.

10 Q. What is your understanding
11 of what oxidative stress means?

12 MS. BROWN: Objection.
13 Calls for speculation.

14 THE WITNESS: Well, as it
15 relates to autism spectrum
16 disorder, my understanding is that
17 there's no consensus in the
18 scientific community that
19 oxidative stress causes autism.

20 BY MR. WATTS:

21 Q. And I'm not sure that
22 answered my question, respectfully.
23 What -- what is your
24 understanding of what oxidative stress

Page 480

1 means, was my question?

2 A. Well, so oxidative stress is
3 a relatively nonspecific term that
4 relates to reactive oxygen, sort of
5 radicals that are circulating in the
6 system and potentially causing damage to
7 cells.

8 Q. What way are they theorized
9 to cause damage to cells?

10 A. There's many, many
11 mechanisms, as I understand it.

12 Q. Give me the mechanisms that
13 you understand.

14 A. I don't understand them,
15 necessarily, because I'm not an expert in
16 this area.

17 Q. Okay. Can I take the last
18 two minutes to say you're not going to
19 testify about oxidative stress one way or
20 the other?

21 A. So I'm comfortable
22 testifying that, based on the scientific
23 literature, my knowledge as an expert in
24 autism, that it's not commonly accepted

Page 481

1 that oxidative stress causes autism.

2 But, no, I'm not going to
3 testify about the mechanisms of oxidative
4 stress.

5 Q. Have you written about
6 oxidative stress as it relates to autism?

7 A. I don't think I've studied
8 that, certainly not on a cellular level.

9 Q. Do you agree that oxidative
10 stress may have lasting consequences for
11 offspring health and development?

12 MS. BROWN: Objection to the
13 form. Lacks foundation. Broad.

14 THE WITNESS: I think that's
15 a broad statement. If you showed
16 me the context, I could sort of
17 agree or disagree.

18 BY MR. WATTS:

19 Q. Sure.
20 Page 190 of your book
21 chapter published in March of last year.
22 Exhibit 494, Page 190.

23 MS. BROWN: Can he have your
24 book? Our hardcopy doesn't go

Page 482

1 past the cover page.

2 BY MR. WATTS:

3 Q. Do you see the second line

4 under "Gestational Diabetes"?

5 Do you agree with that

6 statement, "Oxidative stress due to

7 gestational diabetes may have lasting

8 consequences for offspring health and

9 development"?

10 A. Yeah, I think that's a

11 nonspecific and very vague statement

12 that's kind of hard to say I don't agree

13 with. Because, sure, it's possible, but

14 under certain circumstances.

15 Q. Okay. Maternal alcohol use

16 is associated with a higher risk of

17 autism spectrum disorder?

18 A. I don't think that's been

19 well established.

20 Q. Is maternal alcohol use a

21 major contributor of intellectual

22 disability which is commonly associated

23 with autism spectrum disorder?

24 MS. BROWN: Objection to the

Page 483

1 form of the question.

2 THE WITNESS: Maternal

3 alcohol abuse causes fetal alcohol

4 syndrome which causes intellectual

5 disability.

6 BY MR. WATTS:

7 Q. What is fetal alcohol

8 syndrome?

9 A. It's the effects on a fetus

10 when the mother drinks alcohol.

11 Q. And what is the effect on

12 the fetus when a mother drinks alcohol?

13 A. I don't know the details.

14 I'm not a fetal alcohol syndrome expert.

15 Q. You don't know why fetal

16 alcohol syndrome has an effect on a

17 fetus?

18 MS. BROWN: Objection to the

19 form. Asked and answered.

20 THE WITNESS: I'd have to be

21 speculating, and I don't want to

22 do that.

23 BY MR. WATTS:

24 Q. Okay. Air pollution. Go to

Page 484

1 Page 192, the book chapter marked as

2 Exhibit 494.

3 Down at the bottom it says,

4 "A recent review of 20 articles published

5 in England from 1977 to 2020 found a

6 strong association between maternal

7 exposure to particulate matter, mostly

8 during pregnancy, and the risk of autism

9 spectrum disorder."

10 Is that part of what's

11 written in the book chapter that has your

12 name on it as a co-author?

13 A. Yeah, it's written. But I

14 have no way to evaluate the accuracy of

15 that statement.

16 Q. Okay. Let's talk about

17 metals for a second. Page 191 and 192.

18 Now, my friends at Arnold &

19 Itkin showed me the CV that you produced

20 in that case three months after this was

21 published. It didn't have this book

22 chapter on it there either. Are you

23 aware of that?

24 MS. BROWN: Objection to the

Page 485

1 form. Lacks foundation.

2 THE WITNESS: So I think

3 I've been very clear. I was

4 unaware of this chapter entirely,

5 which is why it didn't appear on

6 my CV. So there was no

7 selectivity around including it or

8 not including it. It never

9 appeared on my CV until defense

10 attorneys pointed it out to me.

11 BY MR. WATTS:

12 Q. Yeah, a month ago.

13 A. Three weeks?

14 Q. Have you revised your CV to

15 add it?

16 A. I haven't yet, but I will

17 for sure.

18 Q. This is the last time you

19 want to be crossed about this missing

20 chapter?

21 MS. BROWN: Objection to the

22 form.

23 THE WITNESS: No. Honestly,

24 I think it's -- to pull out

Page 486

1 sentences from a chapter I didn't
 2 write in a non-peer-reviewed
 3 journal, when you talk about
 4 reasonableness, this is not
 5 reasonable.
 6 BY MR. WATTS:
 7 Q. Well, it's a -- it's a book,
 8 right?
 9 A. It's a chapter that's
 10 outdated by the time it's published, that
 11 very few people in the scientific
 12 community actually read.
 13 Q. Are you going to participate
 14 in a third edition of Autism Spectrum
 15 Disorders to clarify things?
 16 A. That's a very good question.
 17 I think if I have the opportunity to
 18 revise this chapter, I will.
 19 Q. Okay. In the three weeks
 20 since these defense lawyers pointed out
 21 that this book chapter with your name on
 22 it was published in March of 2022, have
 23 you had any discussion with Mr. Hollander
 24 about doing a third edition so you can

Page 487

1 clarify your position?
 2 A. I have not spoken to
 3 Dr. Hollander about clarifying my
 4 position.
 5 Q. Okay. If we look at
 6 Page 192, part of what's written in this
 7 book chapter about metals is, "These
 8 findings suggest that metal toxicant
 9 uptake and essential element deficiency
 10 during specific developmental windows
 11 increases autism spectrum disease risk
 12 and severity, supporting the hypothesis
 13 of systemic elemental dysregulation in
 14 autism spectrum disorder."
 15 Is that what it says?
 16 A. I think Manish has a lot of
 17 interesting hypotheses around the roles
 18 of heavy metals. And that's what he's
 19 written, or that's what's being
 20 referenced here, yes.
 21 Q. Okay. If we could, let's go
 22 to the concept of medications as an
 23 environmental risk for autism spectrum
 24 disorder.

Page 488

1 If we could pull out
 2 Exhibit 556. I want to talk to you about
 3 a May 2010 publication from a college
 4 known as Harvard.
 5 (Document marked for
 6 identification as Exhibit
 7 Kolevzon 556.)
 8 BY MR. WATTS:
 9 Q. Did you apply to go to
 10 Harvard?
 11 A. Sorry?
 12 Q. Huh?
 13 A. Sorry, say that again.
 14 Q. Did you apply to go to
 15 Harvard?
 16 A. I don't think I was
 17 qualified to apply to go to Harvard.
 18 Q. I laughed at one of your
 19 prior depositions that you said you went
 20 to school in Israel, because I didn't get
 21 into school here, or something like that.
 22 I can't remember.
 23 Where did you apply that you
 24 didn't get into such that you went to

Page 489

1 Israel?
 2 A. I only applied in New York,
 3 so Mount Sinai, and Cornell, I was
 4 waitlisted, and it didn't work out.
 5 Q. Okay. By the way, where did
 6 you go to college in Israel?
 7 A. No, I didn't. I went to --
 8 I went to college in the University of
 9 Wisconsin.
 10 Q. You said you went to Israel
 11 because you didn't get in somewhere.
 12 What did you do in Israel?
 13 A. Right. So I went to college
 14 in the University of Wisconsin. And then
 15 I didn't do very well in my first couple
 16 years. So I created some obstacles to
 17 get into medical school. And then I was
 18 waitlisted in medical schools in
 19 New York. So I went to Israel for
 20 medical school. Tel Aviv University.
 21 Q. Okay. Were you overexposed
 22 to environmental toxicants in your first
 23 couple years in college?
 24 A. That is an excellent

Page 490

1 question, Counselor.
 2 MS. BROWN: Objection to the
 3 form of the question.
 4 THE WITNESS: Isn't there --
 5 isn't there something where you
 6 plead the Fifth or...
 7 BY MR. WATTS:
 8 Q. Designate this highly
 9 confidential. I'm just teasing you.
 10 Okay. Let's go to 556.
 11 You kind of served it up on
 12 a platter. I had to go there.
 13 A. Good probe.
 14 Q. The -- 556 is a Working
 15 Paper Number 10 published by the Center
 16 on Developing Child at Harvard
 17 University, the National Scientific
 18 Counsel on the Developing Child,
 19 entitled, "Early Experiences Can Alter
 20 Gene Expression and Affect Long-Term
 21 Development."
 22 And if you could, I want to
 23 be fair and -- why don't you take a look
 24 through this real quick and then I'll ask

Page 491

1 you a couple questions about it.
 2 MS. BROWN: And, Counsel,
 3 for the record, is there a date on
 4 this?
 5 THE WITNESS: 2010.
 6 MR. WATTS: May of 2010, I
 7 believe.
 8 THE WITNESS: Okay.
 9 BY MR. WATTS:
 10 Q. Okay. Let's go to Page 1,
 11 which it says, "The Issue." And on the
 12 right side, it says, "Nutritional status,
 13 exposure to toxins and drugs, and the
 14 experiences of interacting with varied
 15 environment can all modify an
 16 individual's epigenome."
 17 Do you see that, sir?
 18 A. I see that. Yeah, this is
 19 the beginning of epigenetics.
 20 Q. Okay. Do you agree with
 21 that statement?
 22 A. So this is a very broad
 23 statement. And I think that there are
 24 some cases in which this is true and

Page 492

1 other cases where it may not be true.
 2 Q. Okay. Let's go to the next
 3 page, Page 2. The red area first.
 4 "Early prenatal and
 5 postnatal experiences and exposures
 6 influence long-term outcomes by
 7 chemically altering the structure of the
 8 genes."
 9 Do you agree with that
 10 statement?
 11 A. I think that, theoretically,
 12 exposures can influence the structure of
 13 genes, as we know, based on epigenetics.
 14 I don't think it's necessarily
 15 established in autism.
 16 Q. But generally you agree that
 17 this is -- this is true, right?
 18 A. So I definitely agree that
 19 the field of epigenetics is onto
 20 something.
 21 Q. Is on what?
 22 A. Is onto something.
 23 Q. Okay. Good. Let's go to
 24 the second column.

Page 493

1 "We are also learning from
 2 new scientific discoveries in both
 3 animals and humans that environmental
 4 factors such as certain drugs or the
 5 nutritional status of the mother have the
 6 potential to cause epigenetic changes to
 7 genes in eggs or sperm cells in the
 8 fetus."
 9 Do you agree?
 10 A. Again, this is a very broad
 11 statement, and I think in some cases,
 12 it's likely true. In other cases, it's
 13 probably irrelevant.
 14 Q. Okay.
 15 MR. WATTS: Next page. Blow
 16 up the graphic.
 17 BY MR. WATTS:
 18 Q. "How early experiences alter
 19 gene expression and shape development."
 20 And Number 1 says, "External
 21 experiences, e.g., stress, nutrition,
 22 toxins, spark signals between neurons.
 23 "Neuro signals launch
 24 production of gene regulatory proteins

Page 494

1 inside the cell.

2 "Gene regulatory proteins

3 attract or repel enzymes that add or

4 remove epigenetic markers.

5 "Epigenetic markers control

6 where and how much protein is made by a

7 gene, effectively turning the gene on or

8 off, thereby shaping how the brain and

9 bodies develop."

10 Do you see that, 1, 2, 3, 4?

11 A. I do. This reflects the

12 kind of framework of our understanding

13 about epigenetics.

14 Q. Okay. Do you agree with

15 Concept Number 1 with respect to external

16 experiences?

17 MS. BROWN: Objection.

18 Broad.

19 THE WITNESS: So this is a

20 broad statement. And I think it

21 depends.

22 So there are some cases

23 where I suspect it's true. But in

24 the case of autism, it's not

Page 495

1 established.

2 BY MR. WATTS:

3 Q. So -- I'm interested. We

4 have a deposition protocol that says she

5 can say, "Objection. Form." And she

6 says, "Objection. Broad."

7 And you say this is a broad

8 statement.

9 MS. BROWN: Must be broad.

10 MR. WATTS: Must be coached.

11 BY MR. WATTS:

12 Q. Let me ask you this.

13 With respect to Number 1,

14 external experiences, stress, nutrition,

15 toxins spark signals between neurons.

16 Is that true?

17 MS. BROWN: Objection to the

18 form of the question. Broad.

19 MR. WATTS: Well done.

20 THE WITNESS: So just to

21 respond to what you said. I think

22 when you ask a very broad

23 question, it's hard to answer it

24 yes or no.

Page 496

1 And, I mean, I agree she

2 uses the word "broad," and then I

3 use the word "broad," so it may

4 sound suspicious to you, but I'm

5 also capable of evaluating a

6 question and determining whether

7 or not it's broad. In this

8 particular case, this is a very

9 broad question.

10 So I think in some cases,

11 toxins can spark signals between

12 neurons.

13 BY MR. WATTS:

14 Q. So you, as a scientist, are

15 capable, in responding to my question,

16 telling me it's broad without having to

17 be coached by a lawyer?

18 A. Yes.

19 MS. BROWN: I object to the

20 suggestion that there's any

21 coaching going on here.

22 BY MR. WATTS:

23 Q. Lets go to Number 2, neural

24 signal --

Page 497

1 MR. WATTS: Maybe that's why

2 we have the limitation "objection

3 to form." Just curious.

4 BY MR. WATTS:

5 Q. Number 2, neural signals --

6 MS. BROWN: Or to make sure

7 people ask the right questions.

8 BY MR. WATTS:

9 Q. -- launch production of gene

10 regulatory proteins -- let me try --

11 she's talking over me again.

12 Number 2, neural signals

13 launch production of gene regulatory

14 proteins inside cell.

15 Do you agree that that's

16 true?

17 A. Yes.

18 MS. BROWN: I object to the

19 form of that question.

20 BY MR. WATTS:

21 Q. Number 3, gene regulatory

22 proteins attract or repel enzymes that

23 add or remove epigenetic markers.

24 Do you agree that that's

Page 498

1 true?

2 MS. BROWN: Same objection.

3 THE WITNESS: There are

4 cases in which that is true.

5 Again, that's a broad

6 statement.

7 BY MR. WATTS:

8 Q. Epigenetic markers control

9 where and how much protein is made by a

10 gene, effectively turning a gene on or

11 off, thereby shaping how brains and

12 bodies develop.

13 Is that true?

14 A. There --

15 MS. BROWN: Same objection.

16 THE WITNESS: There are

17 circumstances in which that is

18 definitely true.

19 BY MR. WATTS:

20 Q. Okay. Let's go to Page 4.

21 "In addition to adverse

22 experiences, a wide variety of chemicals,

23 nutrients, and drugs are also capable of

24 modifying the epigenome for long-lasting

Page 499

1 effects on gene expression."

2 Is that true?

3 MS. BROWN: I object to that

4 question.

5 THE WITNESS: Potentially,

6 in some cases, that might be true.

7 BY MR. WATTS:

8 Q. And number -- Page 5.

9 "Injurious experiences such

10 as malnutrition, exposure to chemical

11 toxins or drugs, and toxic stress before

12 birth or in early childhood are not

13 'forgotten' but rather are built into the

14 architecture of the developing brain

15 through epigenome."

16 Is that true?

17 MS. BROWN: Objection.

18 THE WITNESS: In some cases

19 it may be true.

20 BY MR. WATTS:

21 Q. Let's go to Page 7. The

22 first sentence in red. Page 7.

23 "Epigenetic changes caused

24 by the exposure of pregnant women,

Page 500

1 infants, and toddlers to environmental

2 toxins, prescription drugs, alcohol, and

3 illicit substances require an urgent look

4 at what safeguards can be implemented to

5 prevent such exposures."

6 Do you agree with that

7 statement?

8 MS. BROWN: Objection to the

9 form.

10 THE WITNESS: Again, this is

11 a broad statement, and I think if

12 epigenetic changes were

13 demonstrated to have clear

14 negative effects, then I would

15 agree with it.

16 BY MR. WATTS:

17 Q. Okay. Further down in the

18 red. It says, "The serious" -- keep

19 going.

20 "The serious and continuing

21 impact of prenatal exposure to alcohol

22 and a wide variety of chemical

23 substances, including prescription drugs,

24 on child health and development calls for

Page 501

1 a more vigorous approach to environmental

2 policies and public education."

3 Do you conceptually agree

4 with that statement?

5 A. I'm not sure that I'm

6 qualified to, like, make regulatory

7 comments.

8 Q. All right. Doctor, do you

9 agree that intrauterine exposure to

10 divalproex sodium is a predictive risk

11 factor for autism spectrum disorder,

12 right?

13 A. I think it's been

14 established that Depakote, or valproic

15 sodium, divalproex sodium, increases the

16 risk of autism, yes.

17 Q. Now, in 2013, in the book

18 "Neuroscience of Autism Spectrum

19 Disorder," Chapter 1.6, Page 97, this is

20 Exhibit 431, Page 97.

21 (Document marked for

22 identification as Exhibit

23 Kolevzon 431.)

24 BY MR. WATTS:

<p style="text-align: right;">Page 502</p> <p>1 Q. Your book chapter ends with 2 the conclusion, "Improved understanding 3 of the nature and likelihood of 4 medication side effects in autism 5 spectrum disorder may help identify risk 6 factors to predict in advance which 7 individuals are most vulnerable." 8 Is that what you wrote in 9 2013? 10 A. Again, I certainly wrote 11 that. But we have to kind of pull out 12 and see the larger context in what I was 13 talking about here. I don't remember 14 this chapter specifically. 15 Q. I'm curious. The 16 Katz/Kolevzon study, Exhibit 491. On 17 Page 3 when you all did this analysis, on 18 Page 3, did you exclude studies focused 19 on the use of medications? 20 A. I think we were focused on 21 metabolic factors in our search criteria. 22 Q. And so you excluded studies 23 focused on the use of medications, right? 24 MS. BROWN: Objection.</p>	<p style="text-align: right;">Page 504</p> <p>1 Q. The website at Mount Sinai 2 says, "Certain medicines taken during 3 pregnancy may also lead to autism 4 spectrum disorder in the child." 5 Do you see that? 6 MS. BROWN: Hang on. Let's 7 let him take a look at it. 8 And when we get to a good 9 spot, can we take a break? 10 MR. WATTS: Sure. 11 BY MR. WATTS: 12 Q. Can you see that there on 13 Page 1, about two inches down from autism 14 spectrum disorder, under causes? 15 A. I see that. I note this is 16 part of the early days when there was 17 concerned about the SSRIs, until the 18 studies were properly controlled for, and 19 didn't realize it was a genetic 20 compounding issue. 21 Q. The early days. 22 Go to Page 12 of this 23 document. When was it last updated? 24 MR. WATTS: Page 11.</p>
<p style="text-align: right;">Page 503</p> <p>1 Misstates testimony. 2 THE WITNESS: I think we 3 were focused on metabolic factors, 4 and we didn't specifically include 5 medications. There are many other 6 papers that have looked at 7 medication effects in autism. 8 BY MR. WATTS: 9 Q. There we go. 10 Does this state that you 11 excluded studies that focused on 12 exposures outside the scope of this 13 review, such as use of medications? 14 A. So I think my testimony is 15 that we focused on metabolic factors and 16 did not include studies of medications or 17 exposures. 18 Q. Okay. Let me show you 19 Exhibit 520, which comes from the Mount 20 Sinai website. 21 (Document marked for 22 identification as Exhibit 23 Kolevzon 520.) 24 BY MR. WATTS:</p>	<p style="text-align: right;">Page 505</p> <p>1 Page 10. Page 9. Page 8. 7. 2 Well, let's go to the upper 3 right-hand corner. 4 BY MR. WATTS: 5 Q. Do you see how I pulled it 6 off of the website on August 22, 2023? 7 You are the clinical 8 director of the Seaver Autism Center at 9 Mount Sinai, and Mount Sinai's website, 10 as of eight days ago, had this 11 information on it, right? 12 A. Yes. As the clinical 13 director I'm responsible for the clinical 14 operations, not the social media or 15 website operations. 16 Q. So this is more recent than 17 the date when the defense lawyers in this 18 case told you about the chapter of the 19 second edition Textbook of Autism 20 Spectrum Disorder, right? 21 MS. BROWN: Objection to the 22 form. 23 BY MR. WATTS: 24 Q. This is fresher than that.</p>

<p style="text-align: right;">Page 506</p> <p>1 MS. BROWN: Same objection.</p> <p>2 THE WITNESS: So, to be</p> <p>3 clear, that's a vast body of</p> <p>4 literature about the associations</p> <p>5 between SSRIs during pregnancy and</p> <p>6 the risk of autism spectrum</p> <p>7 disorder, which have now been</p> <p>8 well-controlled for, and it's</p> <p>9 pretty clear that there is no</p> <p>10 effect. Whatever effect existed,</p> <p>11 existed because of genetic</p> <p>12 confounding.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. So --</p> <p>15 A. Whether I said that --</p> <p>16 anyway, sorry.</p> <p>17 MS. BROWN: No. You should</p> <p>18 finish.</p> <p>19 BY MR. WATTS:</p> <p>20 Q. When your employer says A,</p> <p>21 and you say B, do you have any ability to</p> <p>22 go and get them to clean up their website</p> <p>23 so they are consistent with you?</p> <p>24 MS. BROWN: Objection to the</p>	<p style="text-align: right;">Page 508</p> <p>1 in this case back on December 15th of</p> <p>2 2022?</p> <p>3 A. No. I don't use our website</p> <p>4 as a source of reliable information. I</p> <p>5 use the literature and peer-reviewed</p> <p>6 journals.</p> <p>7 Q. Why does Mount Sinai have a</p> <p>8 website in the first place? Surely they</p> <p>9 are putting up what they think is</p> <p>10 reliable information.</p> <p>11 A. Well, I think that the</p> <p>12 information needs to be updated</p> <p>13 periodically in order to remain reliable.</p> <p>14 Q. Okay.</p> <p>15 MR. WATTS: Why don't we</p> <p>16 take that break that she asked</p> <p>17 for.</p> <p>18 MS. BROWN: Thank you.</p> <p>19 THE VIDEOGRAPHER: The time</p> <p>20 right now is 3:45 p.m. We are off</p> <p>21 the record.</p> <p>22 (Short break.)</p> <p>23 THE VIDEOGRAPHER: The time</p> <p>24 right now is 3:59 p.m. We're back</p>
<p style="text-align: right;">Page 507</p> <p>1 form. Misstates the document.</p> <p>2 THE WITNESS: So we update</p> <p>3 our website periodically. And we</p> <p>4 correct information or provide new</p> <p>5 information.</p> <p>6 Science is an iterative</p> <p>7 process. But I don't monitor the</p> <p>8 website on a very consistent</p> <p>9 basis.</p> <p>10 BY MR. WATTS:</p> <p>11 Q. When you say we update it,</p> <p>12 who is involved in that?</p> <p>13 A. So periodically our</p> <p>14 communications director will say, hey,</p> <p>15 we're taking a look at this page, look at</p> <p>16 the content, would you change anything,</p> <p>17 does anything need to be revised, and</p> <p>18 we'll make changes.</p> <p>19 Q. Have you had any recent</p> <p>20 discussions with your communications</p> <p>21 director about what's on the website</p> <p>22 concerning acetaminophen and autism?</p> <p>23 A. No.</p> <p>24 Q. Even though you were hired</p>	<p style="text-align: right;">Page 509</p> <p>1 on the record.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Doctor, have you done any</p> <p>4 work in analyzing the prevalence of</p> <p>5 autism on the island of Cuba?</p> <p>6 A. I can't say that I have.</p> <p>7 Q. Do you have any information</p> <p>8 as to whether that prevalence rate is</p> <p>9 lower or higher than in the United</p> <p>10 States?</p> <p>11 A. So because autism is a</p> <p>12 genetic disorder, you would expect</p> <p>13 prevalence rates to be roughly equal</p> <p>14 across the population.</p> <p>15 Q. Yes.</p> <p>16 A. However, it would depend a</p> <p>17 lot on the methodology used for the</p> <p>18 prevalence studies.</p> <p>19 Q. Now, you understand that</p> <p>20 acetaminophen, also known as paracetamol,</p> <p>21 is one of the most widely used analgesic</p> <p>22 and antipyretic drugs in the world,</p> <p>23 right?</p> <p>24 A. I'm aware of that, yes.</p>

<p style="text-align: right;">Page 510</p> <p>1 Q. Can we agree that nearly</p> <p>2 two-thirds of the women pregnant in the</p> <p>3 United States use acetaminophen during</p> <p>4 their pregnancy?</p> <p>5 A. I read that that statistic</p> <p>6 is correct, yeah.</p> <p>7 Q. That is a higher rate of use</p> <p>8 than pregnant women across Europe use</p> <p>9 acetaminophen during their pregnancy; is</p> <p>10 that right?</p> <p>11 MS. BROWN: Objection to</p> <p>12 form.</p> <p>13 THE WITNESS: I haven't</p> <p>14 investigated rates across Europe.</p> <p>15 BY MR. WATTS:</p> <p>16 Q. Is acetaminophen available</p> <p>17 over the counter in the European Union?</p> <p>18 MS. BROWN: Objection to</p> <p>19 form.</p> <p>20 THE WITNESS: I haven't</p> <p>21 investigated the use of</p> <p>22 acetaminophen in Europe.</p> <p>23 BY MR. WATTS:</p> <p>24 Q. Okay. You've testified in</p>	<p style="text-align: right;">Page 512</p> <p>1 Q. Okay. You wrote that in</p> <p>2 your book 23 years ago when you were in</p> <p>3 medical school, right?</p> <p>4 A. I may have.</p> <p>5 Q. Okay. Perinatal asphyxia</p> <p>6 can increase the risk of autism?</p> <p>7 A. I think epidemiological</p> <p>8 studies would suggest that</p> <p>9 hypoxia-related events increase the risk,</p> <p>10 yeah.</p> <p>11 Q. Inflammatory processes can</p> <p>12 contribute and increase the risk of</p> <p>13 autism for a subset of cases. You</p> <p>14 testified to that, right?</p> <p>15 A. So I think it would depend</p> <p>16 on the inflammatory process. And I think</p> <p>17 it would be important to clarify that we</p> <p>18 are not talking about causal factors.</p> <p>19 We're talking about associated.</p> <p>20 Q. Well, did you say,</p> <p>21 "Inflammatory process may contribute and</p> <p>22 increase the risk for autism in a subset</p> <p>23 of cases"?</p> <p>24 A. If you're quoting me, then I</p>
<p style="text-align: right;">Page 511</p> <p>1 birth trauma cases, right?</p> <p>2 A. Yes.</p> <p>3 Q. Do you remember the Davis</p> <p>4 versus Menges and MidHudson Medical Group</p> <p>5 case?</p> <p>6 A. I do remember that case,</p> <p>7 yes.</p> <p>8 Q. A young boy named Rhyder</p> <p>9 Davis, who came out blue, according to</p> <p>10 his mother, suffered shoulder dystocia,</p> <p>11 fractured humerus during delivery.</p> <p>12 Does that ring a bell?</p> <p>13 A. Yes.</p> <p>14 Q. Children with autism show an</p> <p>15 increased evidence of perinatal</p> <p>16 complications, right?</p> <p>17 MS. BROWN: Objection to the</p> <p>18 form.</p> <p>19 THE WITNESS: Broadly</p> <p>20 speaking, there are perinatal</p> <p>21 complications that have been</p> <p>22 associated with increased risk of</p> <p>23 autism.</p> <p>24 BY MR. WATTS:</p>	<p style="text-align: right;">Page 513</p> <p>1 assume I said it.</p> <p>2 Q. Okay.</p> <p>3 For the record, August 4,</p> <p>4 2020, Purdie versus Mercy Medical,</p> <p>5 Page 13, Lines 4 through 6, Exhibit 486.</p> <p>6 In the Katz paper, did you</p> <p>7 and Ms. Katz write -- Dr. Katz -- "A</p> <p>8 chronic low-grade inflammatory state is</p> <p>9 thought to be present in obese mothers,</p> <p>10 which accompanies the fetus during its</p> <p>11 intrauterine development"?</p> <p>12 A. That is thought to be the</p> <p>13 case, yes.</p> <p>14 Q. What is a maternal prenatal</p> <p>15 metabolic syndrome?</p> <p>16 A. I think metabolic syndrome</p> <p>17 in general refers to risk of diabetes and</p> <p>18 being overweight.</p> <p>19 Q. And that results in an</p> <p>20 inflammatory state which can have a</p> <p>21 significant impact on fetal</p> <p>22 neurodevelopment, secondary to</p> <p>23 neuroinflammation, and can affect</p> <p>24 synaptic plasticity, oxidative stress, as</p>

<p style="text-align: right;">Page 514</p> <p>1 well as neurotropic and neuroprotective 2 signaling?</p> <p>3 A. Those are all hypothetical 4 mechanisms that can be associated with 5 metabolic syndrome.</p> <p>6 Q. And you wrote that on 7 Pages 2 and 3 of the Katz paper just two 8 years ago in March of 2021, right?</p> <p>9 A. I can look at the paper now 10 and confirm.</p> <p>11 MR. WATTS: Sure. 12 Exhibit 491, Page 2 and 3, please.</p> <p>13 BY MR. WATTS: 14 Q. There it is on the screen. 15 Is that what you wrote?</p> <p>16 A. That's written in there, 17 yes.</p> <p>18 Q. Acetaminophen may interrupt 19 brain development by the induction of 20 oxidative stress leading to neuronal 21 death, right?</p> <p>22 A. Can you repeat that?</p> <p>23 Q. Acetaminophen may interrupt 24 brain development by induction of</p>	<p style="text-align: right;">Page 516</p> <p>1 author of that chapter, yes.</p> <p>2 Q. Okay. And you are the 3 second author listed in that book 4 chapter, right?</p> <p>5 A. I am. But as I've noted, I 6 didn't have an opportunity to review. 7 And if I did, I probably would have 8 changed some of the things in that 9 chapter.</p> <p>10 Q. Okay. What's the 11 relationship between endocannabinoid 12 dysfunction and the risk of autism 13 spectrum disorder?</p> <p>14 MS. BROWN: Objection to the 15 form.</p> <p>16 THE WITNESS: There is no 17 clear relationship. There are 18 some proposed hypothetical 19 relationships.</p> <p>20 BY MR. WATTS: 21 Q. And what's the biologic 22 plausibility of that? Why does that make 23 sense? Why is it being proposed?</p> <p>24 MS. BROWN: I object.</p>
<p style="text-align: right;">Page 515</p> <p>1 oxidative stress leading to neuronal 2 death.</p> <p>3 MS. BROWN: Objection. 4 Lacks foundation.</p> <p>5 THE WITNESS: So I think 6 that that's a theoretical 7 mechanism that some people might 8 propose.</p> <p>9 BY MR. WATTS: 10 Q. Okay. You've seen that 11 proposed in the published literature?</p> <p>12 A. I've seen that proposed in 13 the published literature.</p> <p>14 Q. You've never published that 15 that is incorrect?</p> <p>16 A. I have not published about 17 acetaminophen.</p> <p>18 Q. In the book chapter from 19 last year, it says it's also been 20 suggested that acetaminophen increases 21 the risk for ASD by causing neuronal 22 oxidative stress, citing to the 23 Ghanizadeh publication, 2012?</p> <p>24 A. So that was written by the</p>	<p style="text-align: right;">Page 517</p> <p>1 THE WITNESS: I don't think 2 there's been an established 3 mechanism.</p> <p>4 BY MR. WATTS: 5 Q. You don't know?</p> <p>6 A. I don't think there's been 7 an established mechanism that's commonly 8 accepted. I think people might propose, 9 hypothetically, that it relates to 10 glutamatergic cannabinoid regulation or, 11 perhaps, hypothetically, to immune 12 regulation.</p> <p>13 Q. Okay. You agreed in your 14 report that glutamatergic activity is 15 critical for the brain's plasticity, 16 correct?</p> <p>17 A. That is correct.</p> <p>18 Q. Excitatory and inhibitory 19 imbalance of glutamatergic activity plays 20 a role in autism spectrum disorder, 21 right?</p> <p>22 MS. BROWN: Objection to the 23 form.</p> <p>24 THE WITNESS: There's</p>

Page 518

1 evidence of glutamatergic and
2 GABAergic dysregulation. It's not
3 clear whether it's a causal effect
4 or a consequence.
5 BY MR. WATTS:
6 Q. By the way, AM404 may
7 activate cannabinoid receptors in the
8 brain and exert effects on glutamate GABA
9 activity, right?
10 A. I don't know that that's
11 true.
12 Q. Well, did you write that
13 that was true in your report?
14 A. I wrote that that is what
15 people have proposed to be true
16 theoretically.
17 Q. All right. Have you studied
18 whether or not it is true?
19 A. I am not a toxicologist. I
20 have not studied that, no.
21 Q. In the Purdie versus Mercy
22 Medical case, August 4, 2020, you were
23 asked, "Would you agree that
24 environmental factors outside of a

Page 519

1 genetic context can affect the glutamate
2 system in the developing fetus?"
3 Did you say, "Yes, I'd
4 probably agree with that"?
5 MS. BROWN: Objection to the
6 form.
7 THE WITNESS: So if you can
8 put that up so I can look at it in
9 context --
10 MR. WATTS: Sure.
11 Exhibit 486. Page 83, Lines 9
12 through 19, please.
13 MS. BROWN: Can you blow up
14 the whole page so we can see it.
15 Thank you.
16 BY MR. WATTS:
17 Q. "What role, if any, does the
18 glutamate system play in the final common
19 pathway of autism spectrum disorder?"
20 "I mean, the glutamate
21 system is implicated in many different
22 cases of autism and the glutamate system
23 is relevant to many different genes that
24 underlie autism.

Page 520

1 "Question: Would you agree
2 that environmental factors outside of
3 genetic context can affect the glutamate
4 system in the developing fetus?"
5 "Answer: Yes, I'd probably
6 agree with that."
7 Is that what you said?
8 A. I said that. And I would
9 stand by it.
10 Q. And exposures to various
11 toxins or medicines that affect the
12 glutamatergic system can affect the
13 glutamatergic function of the fetus,
14 right?
15 MS. BROWN: Objection to the
16 form.
17 THE WITNESS: Can you say
18 that again.
19 BY MR. WATTS:
20 Q. Sure.
21 MR. WATTS: Page 85,
22 Lines 11 through 14.
23 By MR. WATTS:
24 Q. And you said, "Likely

Page 521

1 exposures to various toxins or medicines
2 that affect the glutamatergic system can
3 impact the glutamatergic function in the
4 fetus"?
5 A. So what I'm referring here
6 to, toxins, right, we're not talking
7 about acetaminophen, just to be clear.
8 Q. Right. You said or
9 medicines, though, to be fair.
10 A. To be fair.
11 Q. Okay.
12 Is that a true statement?
13 A. I think in a hypothetical
14 sense, and we're talking in a very broad
15 hypothetical sense, it is certainly a
16 possibility.
17 Q. Okay. Prenatal exposure to
18 acetaminophen has been associated in a
19 dose-dependent relationship with
20 increased DNA methylation among children
21 with ADHD.
22 Agreed?
23 A. So you are talking about
24 ADHD, and I'm not prepared to provide

Page 522

1 testimony as to ADHD.

2 Q. Okay.

3 A. I haven't explored that.

4 Q. The genes affected by DNA

5 methylation are those enriched in

6 pathways involving oxidative stress and

7 neurological function.

8 Do you agree?

9 MS. BROWN: Objection to the

10 form.

11 THE WITNESS: Again, in

12 general, it's hard for me to

13 comment on isolated sentences. So

14 if you give me the context, I'm

15 happy to look at it.

16 BY MR. WATTS:

17 Q. Sure.

18 In your report did you say,

19 "Among those differentially methylated

20 regions, the region containing the CYP2E1

21 gene was associated with an increased

22 risk for autism spectrum disorder"?

23 A. Let's take a look at the

24 report.

Page 523

1 Q. Sure.

2 MR. WATTS: Exhibit 403,

3 Page 69, Paragraph 124.

4 BY MR. WATTS:

5 Q. Do you see that, sir?

6 A. Paragraph 125?

7 Q. 124. "Among those

8 differentiated methylated regions, the

9 region containing the CYP2E1 gene was

10 associated with increased risk for autism

11 spectrum disorder."

12 That's in your report,

13 right?

14 A. So I'm discussing the

15 results from a study by Zhu and

16 colleagues, where that was what their

17 finding was.

18 Q. Now, that's at Page 69. If

19 you go back to Page 68 just for a second.

20 You see how in Paragraph 123, you cite to

21 the LaSalle paper in Footnote 201?

22 A. Mm-hmm.

23 Q. Yes?

24 A. Yeah.

Page 524

1 Q. Now J.M. LaSalle is

2 Dr. Janine LaSalle, right?

3 A. I don't know Dr. LaSalle's

4 first name.

5 Q. Are you aware that she was

6 an author of a study identifying the

7 CYP2E1 gene as an autism spectrum

8 disorder risk gene?

9 MS. BROWN: Objection to

10 form. Lacks foundation.

11 THE WITNESS: So I've looked

12 extensively at the genetic

13 literature, and I have not found

14 evidence that CYP2E1 is an autism

15 risk gene.

16 BY MR. WATTS:

17 Q. Have you read her article

18 entitled, "Human Molecular Genetics," in

19 2019?

20 A. I'm happy to take a look at

21 it.

22 Q. Now, with respect to

23 Exhibit 481, which is what you cited to,

24 the LaSalle paper -- no, I'm sorry. I've

Page 525

1 got it butchered.

2 (Document marked for

3 identification as Exhibit

4 Kolevzon 484.)

5 BY MR. WATTS:

6 Q. 484. There's our guy from

7 Australia.

8 A. Back to them, yeah.

9 Q. Okay. Have you read the Zhu

10 and -- paper entitled, "Placental DNA

11 Methylation Levels at CYP2E1 and IRS2 are

12 Associated With Child Outcome in a

13 Prospective Autism Study"?

14 A. I have.

15 Q. And you see how Janine

16 LaSalle is the, what'd you call it, the

17 last author, the senior author?

18 A. Yeah.

19 Q. Okay.

20 In the abstract, go to the

21 abstract. It says, "DNA methylation acts

22 at the interface of genetic and

23 environmental factors relevant for autism

24 spectrum disorder," right?

<p>Page 526</p> <p>1 A. That's what it says.</p> <p>2 Q. And if we go to Page 23 of</p> <p>3 48. Part of the conclusion is, "Both</p> <p>4 CYP2E1 and IRS2 are related to protein</p> <p>5 synthesis, cell proliferation, and cell</p> <p>6 metabolism consistent with previous</p> <p>7 studies of convergent gene pathways in</p> <p>8 autism spectrum disorder. These results,</p> <p>9 therefore, provide evidence that</p> <p>10 placental methylation levels reflect the</p> <p>11 intersection of genetic and environmental</p> <p>12 risk and protective factors that are</p> <p>13 expected to be useful for early</p> <p>14 intervention and prevention of autism</p> <p>15 spectrum disorder."</p> <p>16 Is that what it says?</p> <p>17 A. That's what it says. But I</p> <p>18 don't agree with the conclusions based on</p> <p>19 these data.</p> <p>20 Q. Now, when placental</p> <p>21 methylation levels reflect the</p> <p>22 intersection of genetic and environmental</p> <p>23 risk and protective factors, what is your</p> <p>24 understanding as to what is resulting in</p>	<p>Page 528</p> <p>1 risk and protective factors that are</p> <p>2 expected to be useful for early</p> <p>3 intervention and prevention of ASD?</p> <p>4 MS. BROWN: Objection to</p> <p>5 form.</p> <p>6 THE WITNESS: So very broad.</p> <p>7 So --</p> <p>8 BY MR. WATTS:</p> <p>9 Q. Do you agree with that very</p> <p>10 broad statement?</p> <p>11 A. In general, methylation can</p> <p>12 affect the expression of different genes.</p> <p>13 And differential expression can be</p> <p>14 characteristic of certain disease states</p> <p>15 but doesn't necessarily reflect any</p> <p>16 etiological role.</p> <p>17 Q. Okay. Now, in your report</p> <p>18 at Page 73 and 74, you write that it's</p> <p>19 been postulated -- Paragraph 133.</p> <p>20 "It's been postulated that</p> <p>21 disruptions in prostaglandin signaling</p> <p>22 during early development can lead to</p> <p>23 adverse developmental outcomes, including</p> <p>24 autism spectrum disorder."</p>
<p>Page 527</p> <p>1 a higher risk of ASD? Is it higher</p> <p>2 methylation level at the placental area</p> <p>3 or lower?</p> <p>4 MS. BROWN: Objection to the</p> <p>5 form of the question.</p> <p>6 THE WITNESS: So I'd have to</p> <p>7 go back to the article.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. You don't know?</p> <p>10 A. I'd have to go back to the</p> <p>11 article.</p> <p>12 Q. Okay.</p> <p>13 A. But the idea that CYP2E1 is</p> <p>14 an autism risk gene, to me, is unfounded.</p> <p>15 So the fact that there is differential</p> <p>16 expression does not necessarily mean that</p> <p>17 there's any etiological role.</p> <p>18 Q. So, really, I'm not asking</p> <p>19 about CYP2E1 yet. I'm asking about</p> <p>20 placental methylation levels.</p> <p>21 A. Sure.</p> <p>22 Q. And do you agree that</p> <p>23 placental methylation levels reflect the</p> <p>24 intersection of genetic and environmental</p>	<p>Page 529</p> <p>1 Do you see that?</p> <p>2 A. Yeah. I'm summarizing some</p> <p>3 of what the literature --</p> <p>4 Q. Have you done any research</p> <p>5 yourself with respect to prostaglandin</p> <p>6 synthesis pathways and signaling?</p> <p>7 A. So in my 20-some-odd years</p> <p>8 of experience going to conferences and</p> <p>9 talking to colleagues, I have some</p> <p>10 understanding of what the common pathways</p> <p>11 are and the generally accepted causal</p> <p>12 theories. And prostaglandin synthesis is</p> <p>13 not one of them.</p> <p>14 Q. So, respectfully, that</p> <p>15 wasn't my question. I was asking you</p> <p>16 about you doing original research.</p> <p>17 Have you done any original</p> <p>18 research yourself with respect to</p> <p>19 prostaglandin signaling --</p> <p>20 A. I have not.</p> <p>21 Q. Okay. Do you agree that</p> <p>22 acetaminophen acts as a cyclooxygenase</p> <p>23 inhibitor?</p> <p>24 A. I think that's one of the</p>

<p style="text-align: right;">Page 530</p> <p>1 proposed mechanisms of action.</p> <p>2 Q. Do you agree that that's</p> <p>3 true?</p> <p>4 A. I don't have the knowledge</p> <p>5 or background to determine that.</p> <p>6 Q. Okay. Do you agree that</p> <p>7 cyclooxygenase inhibitors prevent</p> <p>8 prostaglandin synthesis?</p> <p>9 A. I understand that that's</p> <p>10 been postulated. I have no experience to</p> <p>11 confirm that.</p> <p>12 Q. So no way to rebut it or</p> <p>13 confirm it, is what you're saying?</p> <p>14 A. It's outside of my</p> <p>15 expertise.</p> <p>16 Q. Have you read the Addo</p> <p>17 paper, Exhibit 482.</p> <p>18 (Document marked for</p> <p>19 identification as Exhibit</p> <p>20 Kolevzon 482.)</p> <p>21 BY MR. WATTS:</p> <p>22 Q. Have you seen this before?</p> <p>23 MR. WATTS: Put that on the</p> <p>24 left side and put Exhibit 404 up</p>	<p style="text-align: right;">Page 532</p> <p>1 And part of what's on</p> <p>2 Page 5, just so you know where I'm going.</p> <p>3 It says, "Our data suggests that the</p> <p>4 prostaglandin synthesis pathway may be</p> <p>5 disrupted in the placenta related to in</p> <p>6 utero acetaminophen use."</p> <p>7 You can see that, right?</p> <p>8 MS. BROWN: Take as long as</p> <p>9 you need.</p> <p>10 BY MR. WATTS:</p> <p>11 Q. It's up on the screen.</p> <p>12 A. So what you've written --</p> <p>13 what you've read is what's written.</p> <p>14 Q. Okay.</p> <p>15 A. I would probably look more</p> <p>16 deeply into his methods. I think it</p> <p>17 speaks to the point that I made before,</p> <p>18 which is that although there could be</p> <p>19 methylation or expression changes,</p> <p>20 doesn't necessarily reflect an</p> <p>21 etiological mechanism.</p> <p>22 Q. Well --</p> <p>23 A. So I agree that it's written</p> <p>24 on the screen, but I can't agree or</p>
<p style="text-align: right;">Page 531</p> <p>1 on the right.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Exhibit 404, if you go to</p> <p>4 the second page, is your materials</p> <p>5 considered list.</p> <p>6 A. Mm-hmm.</p> <p>7 Q. Do you see between Adams and</p> <p>8 Aishworiya where Addo would go, it's not</p> <p>9 there?</p> <p>10 A. I see that it's not there.</p> <p>11 And I am not familiar with this article.</p> <p>12 Q. Okay. So you haven't read</p> <p>13 the Addo paper before coming here today,</p> <p>14 fair?</p> <p>15 MS. BROWN: Objection to</p> <p>16 form.</p> <p>17 THE WITNESS: I don't -- I</p> <p>18 don't recall.</p> <p>19 BY MR. WATTS:</p> <p>20 Q. Okay. Let's just look at</p> <p>21 Page 5 real quick.</p> <p>22 A. Can you just give me a</p> <p>23 second to read what this is about?</p> <p>24 Q. Sure.</p>	<p style="text-align: right;">Page 533</p> <p>1 disagree, for that matter --</p> <p>2 Q. Yeah, you haven't studied</p> <p>3 it. I mean, this is the first time</p> <p>4 you've ever seen it, fair?</p> <p>5 A. Fair.</p> <p>6 Q. Okay. Now, let's go to</p> <p>7 endocrine disruption for a second.</p> <p>8 You agree that the endocrine</p> <p>9 system plays a clear role in prenatal</p> <p>10 brain development, right?</p> <p>11 MS. BROWN: Objection to</p> <p>12 form.</p> <p>13 THE WITNESS: Yes.</p> <p>14 BY MR. WATTS:</p> <p>15 Q. You agree that the endocrine</p> <p>16 system plays a clear role in prenatal</p> <p>17 brain development, because disruptions in</p> <p>18 endocrine function can lead to a wide</p> <p>19 array of adverse developmental outcomes,</p> <p>20 agreed?</p> <p>21 A. I believe you're reading</p> <p>22 from my report, and I agree with my</p> <p>23 report.</p> <p>24 Q. Now, for that reason, if we</p>

<p style="text-align: right;">Page 534</p> <p>1 go to Exhibit 424, which is Mount Sinai's 2 publication in 2012 where they published 3 a list of the top ten toxic chemicals 4 suspected to cause autism and learning 5 disabilities. 6 (Document marked for 7 identification as Exhibit 8 Kolevzon 424.) 9 BY MR. WATTS: 10 Q. The Center for Environmental 11 Health Center -- or the Children's 12 Environmental Health Center -- go to 13 Page 2 -- put out a list and it says, 14 "CEHC developed a list of ten chemicals 15 found in consumer products that are 16 suspected to contribute to autism and 17 learning disabilities to guide a research 18 strategy to discover potentially 19 preventable environmental causes. The 20 top ten chemicals are..." 21 Is Number 6 endocrine 22 disruptors? 23 A. So, if you're -- yes, the 24 Number 6 is listed as endocrine</p>	<p style="text-align: right;">Page 536</p> <p>1 But what has been pretty 2 reliably established is that there isn't 3 a significant association in 4 epidemiological studies between 5 acetaminophen use during pregnancy and 6 autism as the outcome. 7 Q. Doctor, does serotonin 8 metabolism dysfunction -- does your book 9 chapter from 2022 say it's one of the few 10 consistent biological explanations 11 leading to autism spectrum disorder? 12 A. So the role of the serotonin 13 system in autism is one of the more 14 consistent findings, although it remains 15 hypothesis generating. 16 Q. In the book chapter, at 17 Page 187, says, "These findings suggest 18 prenatal exposure to SSRIs may have a 19 causal role in ASD by operating directly 20 on the developing brain." 21 A. So, thankfully, over time, 22 because science is an iterative process, 23 we've learned that SSRI use during 24 pregnancy is confounded by indication,</p>
<p style="text-align: right;">Page 535</p> <p>1 disruptors. 2 And all of these are worthy 3 for exploration. And all of these are 4 important to study. But none of these 5 have been demonstrated to be associated 6 with autism. 7 Q. Acetaminophen is a 8 well-known endocrine disruptor? 9 A. I can't say that that's 10 true. 11 Q. Can you say that it's 12 untrue? 13 A. As I said, I'm not qualified 14 to analyze the endocrine effects of 15 acetaminophen. I can say that it's not 16 associated with autism, however. 17 Q. Well, acetaminophen may 18 interfere with maternal and neonatal 19 hormones, e.g., the thyroid related to 20 brain development, agreed? 21 A. So there may be many 22 different mechanisms. It's not clear to 23 me that any of them are reliably 24 established.</p>	<p style="text-align: right;">Page 537</p> <p>1 and actually once you control for 2 genetics, you attenuate the effects. So 3 the effect is more about the mom, not 4 about the SSRIs. 5 Q. And you said that in 6 litigation involving SSRIs? 7 A. Have I said that in 8 litigation? I probably put that in a 9 report involving SSRI. 10 Q. What is BDNF? 11 A. What does it stand for? 12 Q. Yeah. 13 A. Brain-derived neurotrophic 14 factor. 15 Q. Say again? 16 A. Brain-derived neurotrophic 17 factor. 18 Q. Okay. Does acetaminophen 19 exposure impact BDNF in the neonatal 20 brain? 21 A. I'm not an expert in this 22 area. I couldn't say whether that was 23 true or not. I'm sure it's been 24 proposed.</p>

<p style="text-align: right;">Page 538</p> <p>1 Q. What you can say is BDNF is</p> <p>2 a critical growth factor for brain</p> <p>3 development and plasticity, right?</p> <p>4 A. I've said that, and I think</p> <p>5 that continues to be the case, yes.</p> <p>6 Q. All right. Now, with</p> <p>7 respect to prostaglandin signaling and</p> <p>8 the risk for autism spectrum disorder,</p> <p>9 your report says it's derived from gene</p> <p>10 expression studies in the cyclooxygenase</p> <p>11 knockout mice, 219, another animal</p> <p>12 experiment showing effects of autism --</p> <p>13 on autism spectrum disorder-related</p> <p>14 symptoms, right?</p> <p>15 A. So when I review the</p> <p>16 literature --</p> <p>17 Q. I'm sorry?</p> <p>18 A. I said when I review the</p> <p>19 literature and I try to figure out from</p> <p>20 where this theory was derived, it seemed</p> <p>21 to be, in part, derived from some animal</p> <p>22 studies, including cyclooxygenase</p> <p>23 knockout mice.</p> <p>24 Q. Okay. Let me show you a</p>	<p style="text-align: right;">Page 540</p> <p>1 identification as Exhibit</p> <p>2 Kolevzon 564.)</p> <p>3 (Video played.)</p> <p>4 DR. KOLEVZON: But so this</p> <p>5 has been sort of our model in</p> <p>6 terms of treatment development.</p> <p>7 This is not a novel model, right.</p> <p>8 This is something that cancer</p> <p>9 treatments have been following for</p> <p>10 a long time.</p> <p>11 But for us, again, this kind</p> <p>12 of window into these single genes</p> <p>13 provides opportunities to, A, you</p> <p>14 know, discover an actual gene that</p> <p>15 we consider to be pathogenic, as</p> <p>16 Colleen explained. And then we</p> <p>17 can sort of replicate that</p> <p>18 biological defect in a model</p> <p>19 system, using rats or mice or fish</p> <p>20 or even human neurons, and you can</p> <p>21 do things with these kinds of</p> <p>22 models that you obviously can't do</p> <p>23 in humans -- and I'll talk about</p> <p>24 some of those details.</p>
<p style="text-align: right;">Page 539</p> <p>1 couple of videos where you talked about</p> <p>2 this.</p> <p>3 MR. WATTS: Exhibit 456.</p> <p>4 November 16, 2017, at the Advances</p> <p>5 in Autism Conference.</p> <p>6 TRIAL TECH: I'm sorry, did</p> <p>7 you say 426?</p> <p>8 MR. WATTS: 456.</p> <p>9 (Document marked for</p> <p>10 identification as Exhibit</p> <p>11 Kolevzon 456.)</p> <p>12 (Video played.)</p> <p>13 DR. KOLEVZON: So then what</p> <p>14 do you want to do. Think about</p> <p>15 our model where you're going to go</p> <p>16 from mouse to physiology, which we</p> <p>17 understand, to now thinking about</p> <p>18 treatment.</p> <p>19 (Video playback ended.)</p> <p>20 BY MR. WATTS:</p> <p>21 Q. And let me show you</p> <p>22 Exhibit 564, also from 2017, but two</p> <p>23 months earlier on September 10th.</p> <p>24 (Document marked for</p>	<p style="text-align: right;">Page 541</p> <p>1 But then it helps you really</p> <p>2 understand what's -- what's going</p> <p>3 on in terms of the brain. Where</p> <p>4 actually are the defects</p> <p>5 occurring. What's the problem in</p> <p>6 terms of nerve cell communication.</p> <p>7 And then eventually you can start</p> <p>8 thinking on that basis what types</p> <p>9 of --</p> <p>10 (Video playback ended.)</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Now, back when you had a</p> <p>13 beard in 2017, is that what you said?</p> <p>14 A. Oh, yeah. And I still say</p> <p>15 that.</p> <p>16 Q. Good beard. I like it.</p> <p>17 One more. Exhibit 458,</p> <p>18 November 16, 2017.</p> <p>19 (Document marked for</p> <p>20 identification as Exhibit</p> <p>21 Kolevzon 458.)</p> <p>22 (Video played.)</p> <p>23 DR. KOLEVZON: And so the</p> <p>24 ways that you want to try to</p>

<p style="text-align: right;">Page 542</p> <p>1 measure and sort of have your 2 animal studies inform your 3 clinical studies and then have 4 your clinical studies inform your 5 animal studies, that's what's 6 called translational science, 7 right. 8 (Video playback ended.) 9 BY MR. WATTS: 10 Q. Is that something you said 11 back in 2017? 12 A. Yep. 13 Q. Let's go to 2020, October 7, 14 489. 15 (Document marked for 16 identification as Exhibit 17 Kolevzon 489.) 18 (Video played.) 19 DR. KOLEVZON: To develop 20 new treatments, we've adopted the 21 following approach. 22 First, we identify a 23 specific gene that causes autism 24 when mutated. Then we replicate</p>	<p style="text-align: right;">Page 544</p> <p>1 provide some context here, right, because 2 what we're talking about is translational 3 science, where we use model systems that 4 are extremely valuable in developing and 5 testing new treatments, because we can do 6 things in a model system and manipulate 7 models in a way that we can't manipulate 8 in humans. And it can provide us with 9 evidence of proof of concept, right? 10 We want to think about, oh, 11 this treatment might work in the model. 12 Maybe it will work in humans. But in no 13 way does the model recapitulate human 14 condition. If, at best, it recapitulates 15 some of the biology. 16 Q. And it's true you can use 17 both human and animal studies to show 18 that something is occurring, right? 19 A. I'd say, sorry, but broad 20 and vague statement. Could you be more 21 specific. 22 Q. I'll give you a specific 23 example. 24 A. Thanks.</p>
<p style="text-align: right;">Page 543</p> <p>1 the genetic defect in the model 2 system using an animal or even a 3 brain cell derived from a 4 patient's blood cells. 5 We can use these models to 6 better understand the biology and 7 understand what's going wrong with 8 brain cell connections. Then we 9 study the various treatments, but, 10 first, in the model, to see if 11 they can reverse the biological 12 changes associated with the 13 genetic defects. If the 14 treatments work in the models, 15 then we move to clinical trials in 16 humans affected by the same 17 genetic changes. 18 There's enormous promise in 19 this approach and many -- 20 (Video playback ended.) 21 BY MR. WATTS: 22 Q. Is that part of what you 23 said in 2020? 24 A. Yes. And I'd like to just</p>	<p style="text-align: right;">Page 545</p> <p>1 Q. Let's go back to the Katz 2 paper. 3 MR. WATTS: Exhibit 491. 4 Pages 2 and 3. 5 BY MR. WATTS: 6 Q. "Human and animal studies 7 have shown that maternal prenatal 8 metabolic syndrome includes increased 9 adiposity and insulin resistance and 10 results in an inflammatory state, as well 11 as altered leptin signaling. These 12 changes have significant impact on fetal 13 neurodevelopment secondary to 14 neuroinflammation and can affect synaptic 15 plasticity, oxidative stress, as well as 16 neurotrophic and neuroprotective 17 signaling." 18 Is that part of what you 19 wrote in 2021? 20 A. I wrote that. And I think 21 in this case it's important to see that 22 the animal studies provide a window 23 that's worth hypothesis testing, just 24 like the animal studies with treatments</p>

<p style="text-align: right;">Page 546</p> <p>1 provide a window.</p> <p>2 But if you do a treatment</p> <p>3 study in a human being, no matter what</p> <p>4 the animal studies show, if the treatment</p> <p>5 fails in the human being, you wouldn't</p> <p>6 continue to say, oh, that treatment works</p> <p>7 because it worked in animals.</p> <p>8 You'd only say it works if</p> <p>9 it worked in the humans. And you</p> <p>10 wouldn't be able to say it on the basis</p> <p>11 of one study. You'd have to say it on</p> <p>12 the basis of multiple studies across</p> <p>13 multiple sites.</p> <p>14 Q. Doctor, let me show you</p> <p>15 Exhibit 445.</p> <p>16 (Document marked for</p> <p>17 identification as Exhibit</p> <p>18 Kolevzon 445.)</p> <p>19 BY MR. WATTS:</p> <p>20 Q. This is a paper that you</p> <p>21 wrote with Theresa Tavassoli, titled,</p> <p>22 "Measuring Sensory Reactivity in Autism</p> <p>23 Spectrum Disorder: Application and</p> <p>24 Simplification of a</p>	<p style="text-align: right;">Page 548</p> <p>1 attention switching, attention detail,</p> <p>2 imagination, and communication. Results</p> <p>3 from the AQ have been replicated</p> <p>4 cross-culturally and across different age</p> <p>5 groups with good test/retest</p> <p>6 reliability."</p> <p>7 Did I read that correctly?</p> <p>8 A. Yeah. The AQ is a good</p> <p>9 screening tool, but it's not a diagnostic</p> <p>10 measure.</p> <p>11 Q. Now, in addition to that,</p> <p>12 you and I have already talked about the</p> <p>13 two most common parent report tools are</p> <p>14 the Modified Checklist for Autism in</p> <p>15 Toddlers, or the M-CHAT-R, right?</p> <p>16 A. I don't know that we've</p> <p>17 talked about that, but --</p> <p>18 Q. Do you agree?</p> <p>19 A. -- that is a correct</p> <p>20 statement.</p> <p>21 Q. And childhood autism --</p> <p>22 Childhood Autism Spectrum Test, or CAST,</p> <p>23 is also used broadly, right?</p> <p>24 A. I don't know that it's used</p>
<p style="text-align: right;">Page 547</p> <p>1 Clinician-Administered Sensory</p> <p>2 Observation Scale."</p> <p>3 Do you see that, sir?</p> <p>4 A. Yes.</p> <p>5 MS. BROWN: I just gave him</p> <p>6 the hardcopy, so take a minute to</p> <p>7 look if you need to.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. And let's go to Page 288.</p> <p>10 And my only point of</p> <p>11 bringing this up is on the first column,</p> <p>12 you all write, "In general, sensory</p> <p>13 questionnaires are considered valuable</p> <p>14 screening tools for sensory issues and</p> <p>15 have the advantage of being low cost and</p> <p>16 easy to administer," right?</p> <p>17 A. Oh, yeah.</p> <p>18 Q. And on the bottom of 288,</p> <p>19 second column, and 289, you write, "The</p> <p>20 Autism Spectrum Quotient, AQ, was used to</p> <p>21 screen autism spectrum disorder traits in</p> <p>22 the TD group. The AQ is a 50-item</p> <p>23 questionnaire with five subscales</p> <p>24 measuring autistic traits, social skills,</p>	<p style="text-align: right;">Page 549</p> <p>1 broadly, but it's been used.</p> <p>2 Q. And then we've talked about,</p> <p>3 before, ADOS, the Autism Diagnostic</p> <p>4 Observation Schedule, right?</p> <p>5 A. I don't think we've talked</p> <p>6 about it before, but that is definitely a</p> <p>7 gold-standard diagnostic tool.</p> <p>8 Q. And in your previous report</p> <p>9 in the Daniels-Feasel case, Exhibit 479,</p> <p>10 you said, "ADOS has improved our ability</p> <p>11 to detect."</p> <p>12 Do you agree?</p> <p>13 TRIAL TECH: What page?</p> <p>14 THE WITNESS: Sorry. Can</p> <p>15 you finish the sentence.</p> <p>16 MR. WATTS: Page 10 of 94.</p> <p>17 It's down at the bottom.</p> <p>18 BY MR. WATTS:</p> <p>19 Q. You write that, "The Autism</p> <p>20 Diagnostic Observation Schedule, ADOS,</p> <p>21 and the Autism Diagnostic</p> <p>22 Interview-Revised have improved our</p> <p>23 ability to test for autism, right?</p> <p>24 A. I think that's true, yes.</p>

Page 550

1 Q. Now, have you ever used the
2 population-based cohort in Sweden called
3 PAGES?
4 A. I have been part of
5 collaborations that have used PAGES, yes.
6 Q. Okay. What other Swedish,
7 Danish, European population-based cohorts
8 have you worked in?
9 A. Numerous ones. I can't
10 recall sitting here.
11 Q. Have you ever studied any of
12 those cohorts with respect to
13 acetaminophen?
14 A. So we may have queried some
15 of those samples. I don't recall whether
16 we have specifically.
17 Q. Okay. Doctor, we talked a
18 little bit about the fact that third
19 parties fund research that Mount Sinai
20 does; is that right?
21 MS. BROWN: Objection to the
22 form.
23 THE WITNESS: So I'll speak
24 to my own research and the

Page 551

1 research of the Seaver Autism
2 Center. It's funded by
3 foundations. It's funded by the
4 federal government. It's funded
5 by industry.
6 BY MR. WATTS:
7 Q. Are you aware of a
8 legislatively required database known as
9 openpayments.com?
10 A. I am, yes.
11 Q. And if we could put up
12 Exhibit 528 on the screen.
13 (Document marked for
14 identification as Exhibit
15 Kolevzon 528.)
16 BY MR. WATTS:
17 Q. Are you aware that since
18 2016, various Janssen industries have
19 made payments to Mount Sinai Hospital
20 exceeding \$10 million?
21 MS. BROWN: Object to this
22 document.
23 Did you make it?
24 MR. WATTS: I did.

Page 552

1 MS. BROWN: Okay. I object.
2 THE WITNESS: I am not aware
3 nor do I follow the payments that
4 are made to Mount Sinai Hospital.
5 I follow the payments that are
6 made to me.
7 BY MR. WATTS:
8 Q. So, as you understand the
9 purpose of OpenPayments data, it's
10 required by the federal government so
11 people can know how much money a
12 particular pharmaceutical company has
13 spent to fund research at a particular
14 hospital facility, right?
15 A. I understand that's the
16 purpose of the law, yes.
17 Q. Okay. And, again, have you
18 ever gone on there and seen how much
19 money came from the Janssen entities to
20 Mount Sinai?
21 A. I have --
22 MS. BROWN: Objection to
23 form.
24 THE WITNESS: I have not,

Page 553

1 no.
2 BY MR. WATTS:
3 Q. Okay. Do you know, if we
4 added 2023 to it, how much more money
5 Janssen has paid Mount Sinai in payments?
6 MS. BROWN: Objection to
7 form.
8 THE WITNESS: I do not know.
9 BY MR. WATTS:
10 Q. As we look at Exhibit 510.
11 (Document marked for
12 identification as Exhibit
13 Kolevzon 510.)
14 BY MR. WATTS:
15 Q. Mount Sinai has a data -- or
16 a website that's entitled, "Our Partners,
17 Our Relationships With Industry Provide
18 Access to Partners and Funding
19 Opportunities."
20 Can you see that?
21 A. Yes.
22 Q. And first up in terms of the
23 list of our partners is Johnson &
24 Johnson, right?

<p>Page 554</p> <p>1 A. That's on the list among 2 many industry partners, yes. 3 Q. In addition to Johnson & 4 Johnson, has Mount Sinai received gifts 5 from Royalty Pharma? 6 MS. BROWN: Objection to the 7 form. 8 THE WITNESS: I would have 9 no way of knowing that. 10 MR. WATTS: Let me show you 11 Exhibit 500, which is a Mount 12 Sinai press release. 13 (Document marked for 14 identification as Exhibit 15 Kolevzon 500.) 16 MS. BROWN: Hang on. Let us 17 get it, please. 18 BY MR. WATTS: 19 Q. You see it talks about a 20 \$20 million gift from Royalty Pharma? 21 MS. BROWN: Hey, I just want 22 to give him the document before 23 you start asking questions about 24 it.</p>	<p>Page 556</p> <p>1 enjoys royalties on 35 commercial 2 products, including Johnson & Johnson's 3 Imbruvica and Tremfya, right? 4 A. That's what it says on the 5 page. 6 Q. Let's go to Page 501 and 7 look at the "Our History of Royal 8 Pharma." 9 It says they "are the 10 largest buyer of biopharmaceutical 11 royalties and a leading funder of 12 innovation across the biopharmaceutical 13 industry." 14 And then it talks about 15 "assembling a portfolio of royalties 16 entitling us to payments on top-line 17 sales of many of the industry's leading 18 therapies, including Johnson & Johnson's 19 Imbruvica and Tremfya." 20 Can you see that? 21 MS. BROWN: Objection. 22 Lacks foundation. 23 THE WITNESS: I can see that 24 it's written on the page.</p>
<p>Page 555</p> <p>1 MR. WATTS: Get 401 -- I 2 mean, get 501, 502, and 503 while 3 you are there. 4 (Document marked for 5 identification as Exhibit 6 Kolevzon 501.) 7 (Document marked for 8 identification as Exhibit 9 Kolevzon 502.) 10 (Document marked for 11 identification as Exhibit 12 Kolevzon 503.) 13 THE WITNESS: So this is an 14 announcement about a gift that's 15 meant to identify, interrogate, 16 and combat health inequities by 17 building a future that is more 18 equitable for all communities, 19 including those that are 20 non-white, low-income, immigrant, 21 uninsured and LGBTQ+. 22 BY MR. WATTS: 23 Q. And Royalty Pharma is a 24 company, if you look at Page 4, that</p>	<p>Page 557</p> <p>1 BY MR. WATTS: 2 Q. Doctor, as we go to 502 -- 3 put that on the left and put 503 on the 4 right. 5 MS. BROWN: Where did 502 6 come from? 7 MR. WATTS: I'll get you 8 that. I -- 9 MS. BROWN: And 503. Can we 10 just identify what these are? 11 MR. WATTS: Yeah. If you go 12 to the Google machine and turn it 13 on, type in the top ten owners of 14 Johnson & Johnson, this comes up. 15 MS. BROWN: Okay. So a 16 lawyer did that and created these 17 two exhibits? 18 MR. WATTS: No, I pulled it 19 off the Google machine. 20 MS. BROWN: Okay. I object. 21 These lack foundation. 22 MR. WATTS: I'll get you the 23 URLs. 24 MS. BROWN: All right.</p>

<p style="text-align: right;">Page 558</p> <p>1 BY MR. WATTS:</p> <p>2 Q. On the left we see that the</p> <p>3 top four owners of Johnson & Johnson are</p> <p>4 the Vanguard Group, SSGA Fund Management,</p> <p>5 Inc., BlackRock Fund Advisors, and Geode</p> <p>6 Capital Management, all of whom are on</p> <p>7 the list of the top ten owners of Royalty</p> <p>8 Pharma.</p> <p>9 Do you see that?</p> <p>10 MS. BROWN: Objection.</p> <p>11 Lacks foundation.</p> <p>12 THE WITNESS: I can say that</p> <p>13 I am totally unqualified and this</p> <p>14 is so outside of my scope, that I</p> <p>15 can read what's on the page, but I</p> <p>16 have no way of evaluating it.</p> <p>17 BY MR. WATTS:</p> <p>18 Q. Does Mount Sinai accept</p> <p>19 grants from third parties that are funded</p> <p>20 by pharmaceutical companies?</p> <p>21 MS. BROWN: Objection to the</p> <p>22 form of the question.</p> <p>23 THE WITNESS: I think that's</p> <p>24 a vague statement. And I can't</p>	<p style="text-align: right;">Page 560</p> <p>1 MS. BROWN: Also, who are we</p> <p>2 suggesting is money laundering?</p> <p>3 MR. WATTS: I used it as an</p> <p>4 example.</p> <p>5 BY MR. WATTS:</p> <p>6 Q. Let me just ask you, are you</p> <p>7 aware of third-party entities through</p> <p>8 which Johnson & Johnson has routed</p> <p>9 payments to Mount Sinai on top of what</p> <p>10 we've already discussed?</p> <p>11 MS. BROWN: I emphatically</p> <p>12 object to these questions as not</p> <p>13 based in facts or truth or</p> <p>14 relevance.</p> <p>15 MR. WATTS: I know. We'll</p> <p>16 get to it.</p> <p>17 THE WITNESS: I'm not aware</p> <p>18 now, no.</p> <p>19 BY MR. WATTS:</p> <p>20 Q. In terms of other pharma</p> <p>21 companies that pay you stipends, you are</p> <p>22 on the advisory boards for Ovid</p> <p>23 Therapeutics, right?</p> <p>24 A. Yes.</p>
<p style="text-align: right;">Page 559</p> <p>1 say yes or no without more</p> <p>2 specifics.</p> <p>3 BY MR. WATTS:</p> <p>4 Q. I'm going to use an example.</p> <p>5 But I don't mean to suggest it's illegal,</p> <p>6 but you know what money laundering is?</p> <p>7 MS. BROWN: I object to the</p> <p>8 form of the question.</p> <p>9 THE WITNESS: I'm familiar</p> <p>10 with the --</p> <p>11 BY MR. WATTS:</p> <p>12 Q. Go ahead.</p> <p>13 A. I'm familiar with the idea</p> <p>14 of money laundering.</p> <p>15 Q. And that is routing the true</p> <p>16 source of the money through some third</p> <p>17 party so you can hide its true source,</p> <p>18 right?</p> <p>19 MS. BROWN: I object to this</p> <p>20 entire line of questioning.</p> <p>21 THE WITNESS: Again, I'm</p> <p>22 totally unqualified to be</p> <p>23 answering questions about money</p> <p>24 laundering.</p>	<p style="text-align: right;">Page 561</p> <p>1 Q. RetroVirox Therapeutics?</p> <p>2 A. I'm on the board. I do not</p> <p>3 receive a stipend.</p> <p>4 Q. Do you have stock options?</p> <p>5 A. No.</p> <p>6 Q. Okay. Jaguar Therapeutics?</p> <p>7 A. I'm an advisor to Jaguar</p> <p>8 Therapeutics, yes.</p> <p>9 Q. Are you paid for your time?</p> <p>10 A. I do get paid for my time if</p> <p>11 I bill for it.</p> <p>12 Q. Okay. Are you paid for your</p> <p>13 time for RetroVirox Therapeutics?</p> <p>14 A. I have not been paid for my</p> <p>15 time for RetroVirox.</p> <p>16 Q. Do you expect to be paid?</p> <p>17 A. I -- at some point in the</p> <p>18 future, if they are successful.</p> <p>19 Q. Okay. You consult with</p> <p>20 Acadia?</p> <p>21 A. I have consulted to Acadia</p> <p>22 in the past.</p> <p>23 Q. Alkermes?</p> <p>24 A. Alkermes, in the past, yes.</p>

<p style="text-align: right;">Page 562</p> <p>1 Q. GW Pharmaceuticals?</p> <p>2 A. I participated in an</p> <p>3 advisory board call for GW, yes.</p> <p>4 Q. Were you compensated for</p> <p>5 your time --</p> <p>6 A. Yes.</p> <p>7 Q. Neuren Pharmaceuticals, or</p> <p>8 Neuren Pharmaceuticals?</p> <p>9 A. I've consulted to Neuren.</p> <p>10 Q. Clinibis Labs?</p> <p>11 A. I have --</p> <p>12 Q. I think I mispronounced</p> <p>13 that. Clinilabs --</p> <p>14 A. Clinilabs, yes.</p> <p>15 Q. -- Drug Development</p> <p>16 Corporation?</p> <p>17 A. I have a consulting</p> <p>18 agreement. I haven't actually consulted</p> <p>19 with them yet.</p> <p>20 Q. Okay. Scioto Biosciences?</p> <p>21 A. I have consulted with them</p> <p>22 in the past.</p> <p>23 Q. Seaside Therapeutics?</p> <p>24 A. I've received grant support</p>	<p style="text-align: right;">Page 564</p> <p>1 funded some studies that we did early on,</p> <p>2 but I don't consult to them, no.</p> <p>3 Q. Novartis?</p> <p>4 A. I don't consult to Novartis.</p> <p>5 Q. Novo Nordisk?</p> <p>6 A. I don't consult to Novo</p> <p>7 Nordisk.</p> <p>8 Q. Roche?</p> <p>9 A. I don't consult to Roche, as</p> <p>10 far as I know.</p> <p>11 Q. Okay. But you do consult</p> <p>12 for Hoffmann-La Roche, right?</p> <p>13 A. I think I have received</p> <p>14 funding for research, which is different</p> <p>15 than consulting.</p> <p>16 Q. I can never tell the</p> <p>17 difference between the two, Hoffmann-La</p> <p>18 Roche, Roche.</p> <p>19 Okay. Let me ask you this.</p> <p>20 How many litigations have you testified</p> <p>21 in, just ballpark?</p> <p>22 A. I think total, between trial</p> <p>23 testimony and depositions, I think it's</p> <p>24 eight or nine.</p>
<p style="text-align: right;">Page 563</p> <p>1 from Seaside, but I have not consulted</p> <p>2 with them.</p> <p>3 Q. Okay. Hoffmann-La Roche?</p> <p>4 A. I have received grant</p> <p>5 support for studies to do the project,</p> <p>6 but I haven't consulted with them, as far</p> <p>7 as I can remember.</p> <p>8 MR. WATTS: If we can go</p> <p>9 back to 510, please. Second page.</p> <p>10 BY MR. WATTS:</p> <p>11 Q. Have you consulted with</p> <p>12 Merck?</p> <p>13 A. Not that I recall.</p> <p>14 Q. GSK?</p> <p>15 A. I think GSK, or some</p> <p>16 subsidiary, funded studies that I was</p> <p>17 involved in.</p> <p>18 Q. Okay. Is that Lan Bio on</p> <p>19 the right?</p> <p>20 Do you know what that is?</p> <p>21 A. I don't.</p> <p>22 Q. Okay. Have you consulted</p> <p>23 with Eli Lilly?</p> <p>24 A. I think Eli Lilly may have</p>	<p style="text-align: right;">Page 565</p> <p>1 Q. Okay. Can you tell me what</p> <p>2 the McSweeney versus South Hampton</p> <p>3 Pediatric Associates is about?</p> <p>4 MS. BROWN: Only if that's</p> <p>5 been disclosed.</p> <p>6 MR. WATTS: It was. It was</p> <p>7 a prior testimony listed.</p> <p>8 MS. BROWN: Okay.</p> <p>9 THE WITNESS: I don't</p> <p>10 remember the details of that case.</p> <p>11 I remember that it was, broadly</p> <p>12 speaking, a medical malpractice</p> <p>13 case.</p> <p>14 BY MR. WATTS:</p> <p>15 Q. In Suffolk County, New York?</p> <p>16 A. Correct.</p> <p>17 Q. Do you know who the</p> <p>18 plaintiffs' lawyer who took your</p> <p>19 deposition was?</p> <p>20 A. This was in New York, so I</p> <p>21 don't believe they have depositions, but</p> <p>22 I was in trial.</p> <p>23 Q. I wish I lived in such a</p> <p>24 state.</p>

Page 566

1 Tell me about the Ting
2 versus Christina Ring case in Boulder,
3 Colorado?
4 MS. BROWN: Same
5 instruction.
6 MR. WATTS: Same answer.
7 These are all prior testimonies.
8 BY MR. WATTS:
9 Q. Go ahead.
10 A. So I don't remember the
11 details of the case other than to
12 remember that it was a medical
13 malpractice case.
14 Q. Anthem versus Franciscan
15 Health -- Health System case in
16 Washington?
17 A. I don't remember the details
18 of that case at all.
19 Q. Okay. Hayes versus Johns
20 Hopkins?
21 A. I don't remember the
22 details.
23 Q. Anderson versus Johns
24 Hopkins?

Page 567

1 A. Now, that one I should
2 remember, because it was quite recent.
3 That was a medical malpractice case, yes.
4 I remember that case.
5 Q. Okay. What did it involve?
6 A. It involved a claim that a
7 child who had hypoxic-ischemic
8 encephalopathy due to some perinatal
9 complication had autism.
10 Q. Okay. And when you said it
11 was very recent, when were you deposed in
12 that case?
13 A. I think that was in the
14 beginning of the summer, maybe the end of
15 the spring.
16 Q. And did they have the joy of
17 deposing you in Kingston, New York?
18 A. No. They did it by Zoom,
19 actually.
20 Q. Okay. Who took your
21 deposition?
22 A. Oh, I remember the person's
23 name. He had a -- can I get that as a
24 multiple choice question?

Page 568

1 I can't remember the name.
2 Sorry. He had an interesting name.
3 Storm maybe.
4 Q. Sorry?
5 A. Storm maybe was his name.
6 We can look it up.
7 Q. Maybe he's related to Stormy
8 Daniels?
9 MS. BROWN: Things are going
10 off the rails rapidly here. We
11 are down to the bottom.
12 MR. WATTS: Segue there.
13 Not me.
14 BY MR. WATTS:
15 Q. Okay. Let's go to
16 Exhibit 506 and 544. Put them up left
17 and right.
18 (Document marked for
19 identification as Exhibit
20 Kolevzon 506.)
21 (Document marked for
22 identification as Exhibit
23 Kolevzon 544.)
24 BY MR. WATTS:

Page 569

1 Q. Okay. Exhibit 506 is Bates
2 page Kolevzon 1 through 108, and
3 Exhibit 544 is Bates page Kolevzon 109
4 through 115.
5 And this is your
6 so-called -- I'll just call it your
7 correspondence file involving when you
8 were talking to Steve Tillery?
9 A. Yep.
10 Q. And my first question is
11 this:
12 What led to the second
13 production in Exhibit 544 that wasn't
14 included in the first that was
15 Exhibit 506; do you know?
16 MS. BROWN: Objection to the
17 form.
18 THE WITNESS: So sorry, can
19 you -- I don't know the
20 difference.
21 BY MR. WATTS:
22 Q. Well, the one on the left, 1
23 through 108, we got, and that was
24 supposed to be your correspondence file

<p style="text-align: right;">Page 570</p> <p>1 involving -- involving Tillery?</p> <p>2 A. Yeah.</p> <p>3 Q. And then subsequently I got</p> <p>4 544, which is Bates page 109 through 115.</p> <p>5 That's some more e-mails. And I'm just</p> <p>6 curious how that came down.</p> <p>7 A. So I think the first time I</p> <p>8 was asked about this by the defense</p> <p>9 attorneys I only searched according to my</p> <p>10 inbox for Tillery.</p> <p>11 Q. Yeah.</p> <p>12 A. And the second time I was</p> <p>13 more comprehensive, so I included my sent</p> <p>14 items --</p> <p>15 Q. Gotcha.</p> <p>16 A. -- as well as my e-mails to</p> <p>17 Shanna Swan.</p> <p>18 Q. Okay.</p> <p>19 A. So there were some e-mails I</p> <p>20 think that were not included, based on my</p> <p>21 sent items.</p> <p>22 Q. Now. Here is my question.</p> <p>23 If we look at the top of Exhibit 544, we</p> <p>24 see Shanna Swan's name, Alexander</p>	<p style="text-align: right;">Page 572</p> <p>1 102.</p> <p>2 MS. BROWN: What are these</p> <p>3 numbers? What is 102?</p> <p>4 MR. WATTS: That's the Bates</p> <p>5 page number in the lower</p> <p>6 right-hand corner.</p> <p>7 MS. BROWN: Of what exhibit?</p> <p>8 TRIAL TECH: 506.</p> <p>9 MR. WATTS: Of Exhibit 506.</p> <p>10 MS. BROWN: Mine's not</p> <p>11 Bates'd.</p> <p>12 BY MR. WATTS:</p> <p>13 Q. Okay. Do you see on the</p> <p>14 screen that in Bates Number 102, we have</p> <p>15 the first entry on your billing records</p> <p>16 of being December 15th?</p> <p>17 A. Yes.</p> <p>18 Q. And that is a half an hour</p> <p>19 and a conversation with somebody at</p> <p>20 Butler Snow. Who was the individual at</p> <p>21 Butler Snow?</p> <p>22 A. I believe it was David</p> <p>23 Snow -- sorry, David Cohen.</p> <p>24 Q. Okay. And that wasn't the</p>
<p style="text-align: right;">Page 571</p> <p>1 Kolevzon, Avi Reichenberg, David</p> <p>2 Kristensen, and Ann Bauer.</p> <p>3 Do you see that?</p> <p>4 A. Yes.</p> <p>5 Q. Are those all individuals</p> <p>6 with whom you are familiar?</p> <p>7 A. So I know Avi Reichenberg</p> <p>8 and I know Shanna Swan. I don't know</p> <p>9 David Kristensen other than paper, and I</p> <p>10 never heard of Ann Bauer before this</p> <p>11 case.</p> <p>12 Q. Okay. Were you on calls</p> <p>13 with those individuals during the fall of</p> <p>14 2022?</p> <p>15 A. So I had one 30-minute call,</p> <p>16 and I'm certain that Shanna Swan was on</p> <p>17 the call and Stephen Tillery was on the</p> <p>18 call and Avi Reichenberg was on the call.</p> <p>19 Q. Okay. And if we could, just</p> <p>20 put down 544 and go to -- go to 506.</p> <p>21 We'll go through it for just a second.</p> <p>22 MR. WATTS: If you go back,</p> <p>23 to about 108. Let's go to 107.</p> <p>24 First bill. Yeah, right there.</p>	<p style="text-align: right;">Page 573</p> <p>1 first time that you spoke with Mr. Cohen</p> <p>2 about this case, though?</p> <p>3 A. No.</p> <p>4 Q. How much earlier than</p> <p>5 December 15 was the first time that you</p> <p>6 spoke to Mr. Cohen?</p> <p>7 A. I don't know exactly. It</p> <p>8 was within -- I don't know exactly. I</p> <p>9 don't want to guess.</p> <p>10 Q. Well, was it in the month of</p> <p>11 November?</p> <p>12 MS. BROWN: Objection to the</p> <p>13 form.</p> <p>14 THE WITNESS: I think it was</p> <p>15 in December, but I don't know.</p> <p>16 BY MR. WATTS:</p> <p>17 Q. So with respect to that</p> <p>18 conversation --</p> <p>19 A. Which conversation?</p> <p>20 Q. The first conversation you</p> <p>21 had with David Cohen at Butler Snow, it</p> <p>22 was prior to December 15, 2022. We know</p> <p>23 that, right?</p> <p>24 A. Yes.</p>

Page 574

1 Q. Best estimate as to how many
2 days prior to the first time where you
3 actually billed your time?
4 A. I don't want to guess.
5 Q. Well, a week?
6 A. I don't want to guess.
7 Q. Okay.
8 A. I can -- if we look at the
9 e-mail chain, I can sort of
10 back-calculate it, but...
11 Q. Yeah. Okay. Go to Bates
12 page number 100.
13 MS. BROWN: We need to find
14 a way to match this up with what
15 we have, because it's not matching
16 up.
17 MR. WATTS: Okay. Bates
18 page 100. At the top or at the
19 bottom -- let's go to 101, and
20 we'll come back to 100. You know
21 how with e-mails you have to work
22 backwards. So start with 101.
23 BY MR. WATTS:
24 Q. You see on November 30th,

Page 575

1 Tillery says to all five of you experts,
2 "I'd appreciate having a call, WebEx, at
3 your convenience, to bring you up-to-date
4 and discuss next steps"?
5 A. Yes.
6 Q. That happens on
7 November 30th?
8 A. Yes.
9 Q. If we go to the top of the
10 screen, Ann Bauer responds, "I would be
11 happy to participate"; is that right?
12 A. Yes.
13 Q. Do you see that?
14 A. Yes.
15 Q. Now, we go to 100, Shanna
16 Swan says, "Me too," right?
17 A. Yep.
18 Q. And then on December 13th,
19 Steve Tillery asks for a time for a call
20 on WebEx, right?
21 A. Yes.
22 Q. And then on December 14th at
23 6:43 a.m., you say, "I'm going to bow
24 out, folks. Good luck with the case,"

Page 576

1 right?
2 A. Right. But there's an
3 e-mail in between where I also respond
4 that I can't participate.
5 Q. Okay. And my question is,
6 the e-mail in between -- and I want to
7 say it was December 1, but we'll find
8 it -- was that before or after you first
9 talked to the Butler Snow lawyer?
10 MS. BROWN: Objection.
11 Calls for speculation.
12 BY MR. WATTS:
13 Q. Go ahead.
14 A. So I believe it was before I
15 spoke to the attorney, because I was
16 involved in another case. And I remember
17 speaking to those attorneys, and that was
18 the impetus for backing out.
19 Q. Okay. The law firm
20 defending the baby food case in Galveston
21 was the one you talked to that was the
22 impetus for backing out with Tillery?
23 A. Correct.
24 Q. Yes?

Page 577

1 A. Correct.
2 Q. Okay. And did you speak to
3 David Cohen at Butler Snow before or
4 after you talked to the law firm that was
5 defending the Galveston case?
6 MS. BROWN: Asked and
7 answered. Objection.
8 THE WITNESS: I think I
9 spoke to David Cohen after I spoke
10 to -- I think these two things
11 happened separate from each other,
12 and the conversation with David
13 happened afterwards.
14 BY MR. WATTS:
15 Q. Okay. So as I get the
16 sequence, you are talking with Tillery
17 and Bauer and Shanna Swan?
18 A. Just to clarify, no. We had
19 one 30-minute call, and then --
20 Q. I'm not going to take you
21 through 100 pages of e-mails. But I -- I
22 get it.
23 There was a discussion that
24 happened where you answered 11 questions

Page 578

1 and --

2 A. No, I didn't answer

3 11 questions. There was a discussion for

4 30 minutes. I don't remember the

5 details.

6 There were 11 questions on

7 the agenda. I don't recall going through

8 11 questions. Then there was some

9 back-and-forth in e-mails. An attempt to

10 schedule a subsequent meeting, and then

11 at that point I had backed out.

12 Q. And so at the time they were

13 attempting to schedule a subsequent

14 meeting, you have a conversation with the

15 defense lawyer who is defending the

16 Galveston autism case, right?

17 A. Correct.

18 Q. You identify that now maybe

19 between the Galveston case and the

20 acetaminophen case, you felt like you had

21 a conflict?

22 A. Yes. It was a potential

23 conflict.

24 Q. Okay. What was the nature

Page 579

1 of that conflict that you felt you had?

2 A. I think it was seen as

3 problematic, potentially, to be on both

4 defense and plaintiffs' side

5 simultaneously in cases around exposures.

6 Q. Okay. I'm sorry, what?

7 A. In cases around exposures.

8 Q. Okay. So then after you

9 backed out, following talking with the

10 defense firm in the Galveston baby food

11 case, you get a call out of the blue from

12 Butler Snow asking you to consult with

13 them in this case?

14 A. They didn't ask me to

15 consult with them. They asked me if I

16 would be interested in.

17 We had an introductory

18 conversation. At that point I still

19 hadn't looked at the literature.

20 Q. And at that point, after you

21 spoke with Butler Snow, you sent the

22 December 14th e-mail saying you're going

23 to back -- bow out?

24 A. So, again, there was an

Page 580

1 e-mail prior to this, and I was still

2 copied on these e-mails trying to

3 schedule. So then I sent another e-mail

4 to say, I'm going to have to bow out.

5 Q. Okay. And then the next day

6 you had your first conversation where you

7 billed Butler Snow for work on behalf of

8 the acetaminophen manufacturers in this

9 case, right?

10 A. Yes. I never saw myself as

11 being retained by the plaintiffs'

12 attorney. And at that point it was clear

13 that I was going to be helping the

14 defense attorneys.

15 Q. Now, let me take you to

16 Exhibit 525.

17 (Document marked for

18 identification as Exhibit

19 Kolevzon 525.)

20 BY MR. WATTS:

21 Q. This is your billing file

22 between 102 and 108. It's separate

23 because -- it's part of your

24 correspondence file, the other one, but I

Page 581

1 separated it.

2 A. Yeah.

3 Q. So here is my question. You

4 had a 30-minute call on December 15th. A

5 second 30-minute call on January 17th.

6 Did no work in between, right?

7 A. Sorry, say that again.

8 Q. Yeah.

9 You had one call on

10 December 15th for a half an hour, a

11 second call on January 17th for a half an

12 hour, and billed for no work in between,

13 right?

14 A. Well, I billed for no work

15 in between. Obviously, I did no work,

16 but I billed for no work, so, yeah.

17 Q. That's my point.

18 Let's go to the next page.

19 The next thing that you do

20 is on January 21st, you start preparing a

21 report on changing prevalence rates.

22 Do you see that?

23 A. Yeah. Yes.

24 Q. And then on the 22nd, you

Page 582

1 start preparing a report on changing
 2 prevalence rates, correct?
 3 A. Yes.
 4 Q. So a total of four hours and
 5 75 minutes.
 6 A. Four hours and 45 minutes.
 7 Q. I'm sorry, 4.75 hours,
 8 right?
 9 Are you a football fan?
 10 A. Do I have to answer?
 11 Q. Yeah. Giants or Jets, which
 12 is it?
 13 A. If I had to choose, I would
 14 go with the Giants.
 15 Q. Okay. You know the Giants
 16 were playing on the 21st in the playoffs
 17 against the Eagles, right?
 18 A. I can't confirm or deny.
 19 Q. Did you watch them get
 20 killed by the Eagles 38 to 7 while you
 21 were working on your prevalence report?
 22 A. I definitely was not
 23 watching the game.
 24 Q. Okay. Well, you didn't miss

Page 583

1 anything, so there you go.
 2 During the call on the 17th,
 3 did they ask you to write a report about
 4 changing prevalence rates?
 5 A. During the call on the 17th
 6 of -- sorry. Can we go back?
 7 Q. Call on the 17th, right
 8 there. Half an hour. You haven't done
 9 anything for a month. You have a call
 10 with Butler Snow for a half an hour and
 11 then you start working on a changing
 12 prevalence rate while the football games
 13 are on, right?
 14 MS. BROWN: And I'm just
 15 going to object to the
 16 conversation on the 17th. It's
 17 been redacted for work product
 18 privilege. And so I'm going to
 19 instruct you not to answer what is
 20 underneath the redaction.
 21 BY MR. WATTS:
 22 Q. That's fair. That's fair.
 23 The first thing that you
 24 chose to do, as it happens, right after a

Page 584

1 half an hour call with Butler Snow, is to
 2 write a report on changing prevalence
 3 rates, right?
 4 A. So I was asked my
 5 opinions -- because that literature I had
 6 already reviewed. And I was asked my
 7 opinions on the changing prevalence
 8 rates, which I discussed, and then I was
 9 asked to provide some overview of those
 10 opinions in writing.
 11 Q. And that's where you gave
 12 them the citation to Croen in 2002,
 13 right?
 14 MS. BROWN: Objection to the
 15 form.
 16 THE WITNESS: I don't know.
 17 And I don't remember when I first
 18 provided that citation.
 19 BY MR. WATTS:
 20 Q. Do you think if the football
 21 games hadn't been on, you might have
 22 spotted the 2003 Blaxill or 2003 Croen
 23 response?
 24 MS. BROWN: Objection to the

Page 585

1 form.
 2 THE WITNESS: I'm not sure
 3 how we can answer that question.
 4 BY MR. WATTS:
 5 Q. Let's see if we can just do
 6 one last thing and then we'll call this a
 7 day, okay?
 8 A. Okay.
 9 Q. If you would go to
 10 Document 404, which is your materials
 11 considered list.
 12 (Whereupon, a discussion was
 13 held off the record.)
 14 BY MR. WATTS:
 15 Q. I'm going to hand you my
 16 copy of 404.
 17 And what I need to know is,
 18 of the documents that you listed as your
 19 materials referred to, if you would take
 20 my blue pen and put a check next to each
 21 of them that you consider them to be a
 22 reliable authority.
 23 MS. BROWN: I'm going to
 24 object to this as improper

<p style="text-align: right;">Page 586</p> <p>1 instruction for the witness. And</p> <p>2 it's an impossible task to be done</p> <p>3 in the remaining time.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. I'll tell you what. Are</p> <p>6 there any authorities that you reference</p> <p>7 that you consider not to be reliable?</p> <p>8 MS. BROWN: On materials</p> <p>9 referenced?</p> <p>10 BY MR. WATTS:</p> <p>11 Q. Sir?</p> <p>12 A. I mean, I considered all</p> <p>13 these papers. In terms of the findings,</p> <p>14 I'd have to go through each and every one</p> <p>15 of them to determine whether they -- I</p> <p>16 consider them to be reliable --</p> <p>17 Q. Right. That's what I meant.</p> <p>18 A. -- on the basis of their</p> <p>19 design and methods and results.</p> <p>20 Q. Which ones did you find to</p> <p>21 be reliable? And just put a check next</p> <p>22 to the ones that you found reliable.</p> <p>23 MS. BROWN: Object to the</p> <p>24 form of the question.</p>	<p style="text-align: right;">Page 588</p> <p>1 the actual papers to make sure</p> <p>2 that I'm being thoughtful and</p> <p>3 comprehensive in my answer.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. What's today's date,</p> <p>6 September 1st?</p> <p>7 A. No -- oh, yeah.</p> <p>8 September 1st.</p> <p>9 Q. Okay. I'll be asking you</p> <p>10 that question again. So if you want to</p> <p>11 think about that between now and the next</p> <p>12 time that we see each other, I think that</p> <p>13 would be a good thing for you to do.</p> <p>14 Okay?</p> <p>15 A. Can you clarify the</p> <p>16 question.</p> <p>17 Q. Sure.</p> <p>18 MS. BROWN: There's no</p> <p>19 question. Don't worry about it.</p> <p>20 We'll look forward to seeing you.</p> <p>21 BY MR. WATTS:</p> <p>22 Q. There is very much a</p> <p>23 question that you're refusing to do, and</p> <p>24 that's okay.</p>
<p style="text-align: right;">Page 587</p> <p>1 What part reliable?</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Go ahead, sir. Just put a</p> <p>4 check on the ones that you think are</p> <p>5 reliable.</p> <p>6 THE VIDEOGRAPHER: Just grab</p> <p>7 your microphone.</p> <p>8 THE WITNESS: We'd have to</p> <p>9 go to the actual papers and make</p> <p>10 sure that I'm looking at all the</p> <p>11 papers, and then we can do that</p> <p>12 exercise.</p> <p>13 BY MR. WATTS:</p> <p>14 Q. Okay. Do you have any in</p> <p>15 here that you consider to be not</p> <p>16 reliable?</p> <p>17 MS. BROWN: Same.</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Just off the top -- top of</p> <p>20 your head?</p> <p>21 MS. BROWN: Same objection.</p> <p>22 THE WITNESS: You know, I</p> <p>23 don't want to respond off the top</p> <p>24 of my head. I'd rather look at</p>	<p style="text-align: right;">Page 589</p> <p>1 But the question is, I would</p> <p>2 like to know which of the materials</p> <p>3 you've considered, you consider to be</p> <p>4 reliable authorities.</p> <p>5 A. I'm not refusing --</p> <p>6 MS. BROWN: Okay. And to be</p> <p>7 fair -- hold on. Hold on.</p> <p>8 He's not refusing. This is</p> <p>9 how you chose to spend your time</p> <p>10 today. He asked to be able to</p> <p>11 complete the task you've asked of</p> <p>12 him, to have each one of these</p> <p>13 studies so he can reliably go</p> <p>14 through them and answer your</p> <p>15 question.</p> <p>16 MR. WATTS: Okay.</p> <p>17 MS. BROWN: We don't have</p> <p>18 time for that.</p> <p>19 MR. WATTS: Well, that's not</p> <p>20 my problem.</p> <p>21 MS. BROWN: But I think it</p> <p>22 is, because it's your time.</p> <p>23 MR. WATTS: Alli, you're not</p> <p>24 the judge. Now let me take my</p>

Page 590

1 deposition, okay?

2 BY MR. WATTS:

3 Q. Now, my question is, which

4 of these are reliable authorities. And

5 if you'd like to answer it, fill it in

6 before you sign your deposition, I'm

7 happy to do that.

8 I'm making the request. I

9 want a list of these materials considered

10 that you consider to be reliable

11 authorities, okay?

12 MS. BROWN: I object. He's

13 not going to do that. He's

14 already answered that question.

15 BY MR. WATTS:

16 Q. Go ahead.

17 A. So my answer is that I'm

18 happy to do that.

19 Q. Okay.

20 A. However, I can't do that on

21 the basis of titles. I need to do it on

22 the basis of the actual articles. And

23 there are, you know, 20 pages in here.

24 Q. Yep.

Page 591

1 A. So we'd have to go through

2 each article, look at the methods, look

3 at the rigor, look at the design, look at

4 all the elements of it, and then I can

5 try to answer that question.

6 Q. Okay. Great. Well, that's

7 my request. And if you want to comply

8 with it before you read and sign your

9 deposition, you can. If you choose not

10 to, whatever the repercussions are of

11 that, that'll be fine.

12 MS. BROWN: There's no

13 repercussions. I object to the

14 instruction.

15 MR. WATTS: Judge, Judge,

16 come on.

17 MS. BROWN: That's improper.

18 Are you threatening him with

19 repercussions? It sounded like a

20 threat. It's outrageous.

21 MR. WATTS: It sounds like

22 coaching.

23 THE WITNESS: I thought we

24 were done.

Page 592

1 MR. WATTS: Objection to

2 form. My goodness.

3 BY MR. WATTS:

4 Q. What's a business address

5 and phone number that you can be reached

6 at for purposes of identifying you on the

7 record?

8 MS. BROWN: He's a retained

9 expert. If you need to reach him,

10 you call us.

11 THE WITNESS: I was going to

12 say that.

13 MR. WATTS: Okay. So I'll

14 list the business address of

15 Skadden Arps?

16 MS. BROWN: Please do.

17 MR. WATTS: That's fine.

18 Okay. Those are all my

19 questions. Thank you.

20 MS. BROWN: I'm going to

21 have a few questions, but can we

22 take ten minutes, please.

23 THE VIDEOGRAPHER: The time

24 right now is 5:01 p.m. We are off

Page 593

1 the record.

2 (Short break.)

3 THE VIDEOGRAPHER: The time

4 right now is 5:11 p.m. We're back

5 on the record.

6 - - -

7 EXAMINATION

8 - - -

9 BY MS. BROWN:

10 Q. Welcome back, Dr. Kolevzon.

11 How are you doing?

12 A. I'm good, thanks, Alli.

13 Q. Okay. Just a couple of

14 quick questions for you at the end of the

15 day here.

16 We started this morning

17 talking about institutions and doctors

18 you may know from different institutions.

19 Do you remember those questions?

20 A. I do.

21 Q. And one of the things

22 counsel was asking you about was things

23 like, do you think Harvard is a good and

24 respectable school, right?

Page 594

1 A. Right.

2 Q. And you agreed, of course,

3 that Harvard and Yale and Mount Sinai,

4 these are respectable institutions,

5 correct?

6 A. Correct.

7 Q. And you were asked a number

8 of questions about doctors that you may

9 know and you may have written with or

10 presented with or worked with over the

11 years, correct?

12 A. Correct.

13 Q. And many of those doctors

14 you believed to be good doctors, correct?

15 A. Correct.

16 Q. But, Dr. Kolevzon, I want to

17 ask you about whether it is reasonable

18 for doctors to have the opinion, based on

19 the current scientific literature, that

20 acetaminophen causes autism?

21 A. I don't think that the

22 scientific literature supports an

23 association between acetaminophen and

24 autism, and it certainly doesn't support

Page 595

1 a causal one.

2 Q. And so is it possible,

3 though, for reasonable scientists to

4 disagree on the question of whether

5 acetaminophen causes autism?

6 A. I think any reasonable

7 scientist that would evaluate the

8 literature would come to the same

9 conclusion, so I think, in this

10 particular case, it's not possible or it

11 shouldn't be possible for a reasonable

12 scientist to disagree.

13 Q. And you were shown, in

14 connection with that line of questioning,

15 you were shown a number of press releases

16 and articles discussing whether or not

17 there could be an association between

18 acetaminophen and autism. Do you recall

19 some of those?

20 A. Yes.

21 Q. Okay. And I want to show

22 you and ask you some questions about

23 Exhibit 560, which was this 2021 printout

24 from a women's health section of the

Page 596

1 Harvard Medical School.

2 Do you recall some questions

3 about this?

4 A. Vaguely, yes.

5 Q. Okay. And do you recall,

6 actually, a lot of questions about just

7 headlines and press releases and

8 sentences and articles you weren't

9 familiar with?

10 MR. WATTS: Objection.

11 Leading.

12 THE WITNESS: I was asked to

13 confirm that what was written on

14 the page was in fact written on

15 the page.

16 But, yes, they were from

17 various press releases.

18 BY MS. BROWN:

19 Q. And is it important, though,

20 when you're evaluating any kind of

21 document, to actually read what the words

22 in the document say?

23 A. Yes. I think in order to

24 evaluate what the document is saying, you

Page 597

1 need to understand the source and the

2 methods used to determine the

3 conclusions.

4 Q. And so, for example,

5 Exhibit 560's title, "Is a Common Pain

6 Reliever Safe During Pregnancy?"

7 And let's just look briefly

8 at what the article actually says.

9 Would you read for us,

10 Doctor, the last two sentences of this

11 press release that you were asked about

12 the title of?

13 A. "While the issue they raise

14 is important, it's worth noting that the

15 concerns come from studies done in

16 animals and human observational studies.

17 These type of studies cannot prove that

18 acetaminophen is the actual cause of any

19 of these problems."

20 Q. And, Doctor, on the very

21 next page of the Harvard press release,

22 what does it say about the research on

23 this topic?

24 A. It says the research on this

<p style="text-align: right;">Page 598</p> <p>1 topic is not conclusive.</p> <p>2 Q. And is that consistent with</p> <p>3 your review of the literature?</p> <p>4 A. It is.</p> <p>5 Q. Okay. And what does it say</p> <p>6 in terms of whether or not this is an</p> <p>7 area where a causal association has been</p> <p>8 proven?</p> <p>9 A. It says that more research</p> <p>10 is needed to confirm that this medicine</p> <p>11 is truly causing health problems, and to</p> <p>12 determine at what doses and at what</p> <p>13 points during the pregnancy exposure to</p> <p>14 acetaminophen might be most harmful.</p> <p>15 Q. And was one of the sensible</p> <p>16 steps that the Harvard folks actually</p> <p>17 suggest pregnant moms do when considering</p> <p>18 whether or not to take acetaminophen</p> <p>19 during pregnancy?</p> <p>20 A. It looks like they are</p> <p>21 recommending to consult with your doctor.</p> <p>22 Q. Okay. And what is the</p> <p>23 concluding sentence, Doctor, of this</p> <p>24 Harvard press release as it relates to</p>	<p style="text-align: right;">Page 600</p> <p>1 acetaminophen.</p> <p>2 But, in fact, this document</p> <p>3 doesn't say a word about acetaminophen,</p> <p>4 right?</p> <p>5 A. Right.</p> <p>6 Q. Okay. And what he did point</p> <p>7 you to is a section about causes, right?</p> <p>8 A. Yes.</p> <p>9 Q. The exact cause of autism</p> <p>10 isn't known; do you agree with that?</p> <p>11 A. Other than genetics.</p> <p>12 Q. Okay. Certain medicines</p> <p>13 taken during pregnancy may also lead to</p> <p>14 ASD in the child.</p> <p>15 You talked to us about a</p> <p>16 study showing an association with</p> <p>17 valproic acid, correct?</p> <p>18 A. Yes.</p> <p>19 Q. And do you believe that</p> <p>20 there have been some studies showing a</p> <p>21 potential association?</p> <p>22 A. Yes.</p> <p>23 Q. Does this page of Mount</p> <p>24 Sinai's website say anything about</p>
<p style="text-align: right;">Page 599</p> <p>1 that advice to pregnant moms?</p> <p>2 A. That assuming it's advised</p> <p>3 by your doctor, that the benefits</p> <p>4 outweigh the risks.</p> <p>5 Q. Okay. You were asked some</p> <p>6 questions about the Mount Sinai website</p> <p>7 at Exhibit 520, and I just want to make</p> <p>8 sure that I understood your testimony and</p> <p>9 it's consistent.</p> <p>10 Counsel asked you if you</p> <p>11 agreed with what Mount Sinai said on</p> <p>12 their website about acetaminophen.</p> <p>13 Do you recall that question?</p> <p>14 A. I do.</p> <p>15 Q. Okay. Did Exhibit 520 that</p> <p>16 counsel showed you, titled, "Autism</p> <p>17 Spectrum Disorder," does it say anything</p> <p>18 about acetaminophen?</p> <p>19 A. Not to my knowledge.</p> <p>20 Q. Okay. And so he mentioned</p> <p>21 that this had been recently printed off</p> <p>22 of the Mount Sinai website. And there</p> <p>23 were some questions about whether you</p> <p>24 support what Mount Sinai says about</p>	<p style="text-align: right;">Page 601</p> <p>1 acetaminophen causing autism?</p> <p>2 A. Not that I'm aware of.</p> <p>3 Q. Okay. You were asked a lot</p> <p>4 of questions, Dr. Kolevzon, throughout</p> <p>5 the day about a recent edition of a book</p> <p>6 chapter you wrote years ago that we have</p> <p>7 as Exhibit 494.</p> <p>8 Do you recall that series of</p> <p>9 questions?</p> <p>10 A. Yes.</p> <p>11 Q. Okay. And when counsel was</p> <p>12 asking you about the questions, he</p> <p>13 referred to a -- what he termed to be a</p> <p>14 very recent edition of this book,</p> <p>15 correct?</p> <p>16 A. Correct.</p> <p>17 Q. And, in fact, this book, the</p> <p>18 addition that we have at 494, came out</p> <p>19 just within the last couple of years,</p> <p>20 correct?</p> <p>21 A. Yes.</p> <p>22 Q. Okay. I want to show you</p> <p>23 some -- and I understand you didn't write</p> <p>24 this section, right?</p>

<p style="text-align: right;">Page 602</p> <p>1 A. No.</p> <p>2 Q. Okay. Nevertheless, I want</p> <p>3 to show you some sections of this</p> <p>4 chapter, though, that counsel didn't show</p> <p>5 you and see if you agree with them.</p> <p>6 First chapter of the</p> <p>7 paragraph says, "Caution against</p> <p>8 inappropriately causing the public to</p> <p>9 blame mothers for their child's condition</p> <p>10 is sometimes warranted in studies on</p> <p>11 associations in which a mother's agency</p> <p>12 is involved, such as the case of maternal</p> <p>13 antidepressant use during pregnancy."</p> <p>14 Do you see that?</p> <p>15 A. Yes.</p> <p>16 Q. What does that mean to you,</p> <p>17 Doctor?</p> <p>18 A. It means going back to the</p> <p>19 history of autism, people would blame</p> <p>20 mothers for their child's autism, and I</p> <p>21 think that's quite dangerous, especially</p> <p>22 as those theories have mostly been</p> <p>23 disproven.</p> <p>24 And when a mother who is</p>	<p style="text-align: right;">Page 604</p> <p>1 Would you read that final</p> <p>2 sentence for us there, Doctor.</p> <p>3 A. "We present plausible</p> <p>4 biological mechanisms linking those risk</p> <p>5 factors to ASD and suggest some</p> <p>6 directions for future research."</p> <p>7 Q. And what does "suggest</p> <p>8 future directions for future research"</p> <p>9 mean to you, Doctor?</p> <p>10 A. It means that all these</p> <p>11 biological mechanisms that are proposed</p> <p>12 are hypothesis driven, and that's why</p> <p>13 it's important to do future research, to</p> <p>14 try to actually establish them as</p> <p>15 plausible.</p> <p>16 Q. And is that consistent with</p> <p>17 your review of the literature, Doctor?</p> <p>18 A. It is.</p> <p>19 Q. Okay. And then I don't</p> <p>20 think we had a chance to actually look at</p> <p>21 what other authors said about</p> <p>22 acetaminophen. I want to ask you about</p> <p>23 that.</p> <p>24 This short paragraph says,</p>
<p style="text-align: right;">Page 603</p> <p>1 depressed takes an SSRI and passes on</p> <p>2 increased risk by virtue of their genetic</p> <p>3 susceptibility and tries to treat the</p> <p>4 depression and you blame the mother for</p> <p>5 taking the SSRI, that's potentially very</p> <p>6 damaging.</p> <p>7 Q. This very recent chapter</p> <p>8 that you didn't write says on the next</p> <p>9 page, "Despite significant research into</p> <p>10 the association between conditions and</p> <p>11 complications of pregnancy and birth and</p> <p>12 autism spectrum disorder, the causal</p> <p>13 nature of these associations is still in</p> <p>14 question."</p> <p>15 Do you agree with that?</p> <p>16 A. Yes. I think that there are</p> <p>17 some associations that have been reliably</p> <p>18 shown, but the strength and consistency</p> <p>19 would not lead one to conclude that they</p> <p>20 are causal in nature.</p> <p>21 Q. Okay. And you were pointed</p> <p>22 out this sentence on the next page about</p> <p>23 mechanisms, but I don't think the</p> <p>24 complete sentence was read.</p>	<p style="text-align: right;">Page 605</p> <p>1 "It's also been suggested that</p> <p>2 acetaminophen increases the risk for</p> <p>3 autism spectrum disorder by causing</p> <p>4 neuronal oxidative stress. Only one</p> <p>5 meta-analysis has been published focusing</p> <p>6 on this association, and considering the</p> <p>7 susceptibility of individual</p> <p>8 observational studies to several biases,</p> <p>9 mostly confounding by indication, this</p> <p>10 association awaits further elucidation."</p> <p>11 What does that mean, Doctor?</p> <p>12 A. So, again, I didn't write</p> <p>13 this. But the person who did was able to</p> <p>14 review the literature at the time.</p> <p>15 Things have evolved since then, but I</p> <p>16 think they included one meta-analysis by</p> <p>17 Masarwa. And I think within that</p> <p>18 meta-analysis there were six or so</p> <p>19 studies included, only one of which used</p> <p>20 autism as an outcome.</p> <p>21 And the kind of combined</p> <p>22 among all those studies odds ratio was</p> <p>23 something like 1.19. And so on that</p> <p>24 basis they are saying there is a possible</p>

<p style="text-align: right;">Page 606</p> <p>1 association.</p> <p>2 But because of the</p> <p>3 inconsistency across studies, a lot more</p> <p>4 work needs to be done to -- to establish</p> <p>5 that. And, actually, since then,</p> <p>6 multiple studies have examined this, and</p> <p>7 most have been negative.</p> <p>8 Q. And anywhere in this short</p> <p>9 paragraph on acetaminophen, do these</p> <p>10 authors conclude that maternal use of</p> <p>11 acetaminophen is a cause of autism?</p> <p>12 A. No, certainly not.</p> <p>13 Q. Okay. And then, finally,</p> <p>14 Doctor, at the very end of this chapter,</p> <p>15 there is some conclusions and future</p> <p>16 directions.</p> <p>17 Do you see that?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. And I think we talked</p> <p>20 about some of these highlights. But</p> <p>21 let's just look at the very first</p> <p>22 unhighlighted sentence fragment.</p> <p>23 "Although the etiology of</p> <p>24 autism remains largely unknown."</p>	<p style="text-align: right;">Page 608</p> <p>1 the kind of clinical features or</p> <p>2 the phenotype that we see as being</p> <p>3 driven by genetics.</p> <p>4 BY MS. BROWN:</p> <p>5 Q. And how does that relate to</p> <p>6 the 20 percent or less of genes we've</p> <p>7 actually identified that you spoke about</p> <p>8 today?</p> <p>9 A. Right. So 20 years ago we</p> <p>10 were able to identify 1 percent,</p> <p>11 2 percent. Today we're able to identify</p> <p>12 20 percent or even 30 percent.</p> <p>13 What that means is that</p> <p>14 despite it being 80 to 90 percent genetic</p> <p>15 in origin, if you do a genetic test on a</p> <p>16 population of 100 kids, you're only going</p> <p>17 to find a specific gene in 20 to</p> <p>18 30 percent. And that reflects the</p> <p>19 limitations in both the technology, our</p> <p>20 analytic methods, and just the state of</p> <p>21 the knowledge.</p> <p>22 Q. And because we don't know</p> <p>23 what the genes are, does that mean that</p> <p>24 there's only a genetic cause or a genetic</p>
<p style="text-align: right;">Page 607</p> <p>1 Do you agree with that?</p> <p>2 A. I think, other than genetics</p> <p>3 sort of en masse, it is largely unknown.</p> <p>4 And I think we still have many, many,</p> <p>5 many genes, even thousands, that we have</p> <p>6 yet to identify.</p> <p>7 Q. Now I want to ask you a</p> <p>8 couple of follow-up questions, actually,</p> <p>9 about that.</p> <p>10 We talked a little bit about</p> <p>11 genetics today, and I thought I heard you</p> <p>12 use the percentage 70 to 80 percent of</p> <p>13 autism may be caused by genetics.</p> <p>14 Was that your testimony?</p> <p>15 MR. WATTS: Objection.</p> <p>16 Form.</p> <p>17 THE WITNESS: So we were</p> <p>18 talking about the heritability of</p> <p>19 autism, and I think, generally</p> <p>20 speaking, it's accepted to be</p> <p>21 about 80 percent, even perhaps</p> <p>22 more. I think in my report I said</p> <p>23 70 to 90. So estimates range.</p> <p>24 But that is the amount of</p>	<p style="text-align: right;">Page 609</p> <p>1 factor in 20 percent of those cases?</p> <p>2 A. No. Decades and decades of</p> <p>3 literature, especially in twins, shows</p> <p>4 quite convincingly that 80 to 90 percent</p> <p>5 of autism is genetically driven.</p> <p>6 Q. And, in fact, one of the</p> <p>7 things the folks who wrote this book</p> <p>8 chapter that we spent a lot of time on</p> <p>9 here today wrote was that "perhaps the</p> <p>10 most important potential confounder to</p> <p>11 consider is genetic susceptibility to ASD</p> <p>12 which may be associated with obstetrical</p> <p>13 suboptimality."</p> <p>14 What does that mean?</p> <p>15 A. So in this particular case,</p> <p>16 it means that the child may be at</p> <p>17 increased risk for autism based on in</p> <p>18 uterine conditions. Based on, you know,</p> <p>19 speculatively, stress of the mother. And</p> <p>20 it's for that reason that they are taking</p> <p>21 Tylenol or acetaminophen.</p> <p>22 And it's not that the</p> <p>23 acetaminophen is causing the autism, it's</p> <p>24 the obstetric conditions that are causing</p>

<p style="text-align: right;">Page 610</p> <p>1 the autism or some other genetic</p> <p>2 confounding.</p> <p>3 There are studies that</p> <p>4 suggest that there are sort of genetic</p> <p>5 reasons why mothers might take Tylenol,</p> <p>6 and those same genetic reasons may drive</p> <p>7 the autism diagnosis.</p> <p>8 Q. You were shown a Exhibit 545</p> <p>9 today, which was a blank chart titled,</p> <p>10 "Kolevzon's Explanation for Rising</p> <p>11 Prevalence Rates of ASD."</p> <p>12 Do you remember this chart?</p> <p>13 A. Yes.</p> <p>14 Q. Okay. And counsel started</p> <p>15 to fill in, in red, some dates.</p> <p>16 A. Yes.</p> <p>17 Q. Do you recall that?</p> <p>18 A. Yes.</p> <p>19 Q. Okay. And based on your</p> <p>20 20-plus years of experience and your</p> <p>21 review of the scientific literature, are</p> <p>22 those dates reflective of the time period</p> <p>23 for which these explanations apply?</p> <p>24 A. No. I think I mentioned</p>	<p style="text-align: right;">Page 612</p> <p>1 up until today.</p> <p>2 It's the last prevalence</p> <p>3 rate that was estimated by the CDC is 1</p> <p>4 out of 36 children has autism. And if</p> <p>5 that's because of some, as of yet,</p> <p>6 unknown environmental factor, it would be</p> <p>7 absolutely shocking.</p> <p>8 Q. And, in fact -- and we'll</p> <p>9 mark this as Defense-1 and provide it to</p> <p>10 your deposition.</p> <p>11 (Document marked for</p> <p>12 identification as Kolevzon Defense</p> <p>13 Exhibit 1.)</p> <p>14 BY MS. BROWN:</p> <p>15 Q. In fact, along those lines,</p> <p>16 if we just take a quick peek back at 520,</p> <p>17 that Mount Sinai website that counsel</p> <p>18 showed you. Mount Sinai says, "The</p> <p>19 increase in children with ASD may be due</p> <p>20 to better diagnosis and newer definitions</p> <p>21 of ASD. Autism spectrum disorder now</p> <p>22 includes syndromes that used to be</p> <p>23 regarded as separate disorders."</p> <p>24 Is that part of what you</p>
<p style="text-align: right;">Page 611</p> <p>1 that these explanations reflect dynamic</p> <p>2 changes over the last, in some cases,</p> <p>3 40 years that have kind of iteratively</p> <p>4 affected prevalence rates.</p> <p>5 So even though a certain</p> <p>6 mandate occurred in 2007, that doesn't</p> <p>7 mean that it only affected prevalence in</p> <p>8 2007, because it affected prevalence from</p> <p>9 2007 until today, for example.</p> <p>10 Q. And so if you wanted to</p> <p>11 accurately put a date through which these</p> <p>12 explanations were continuing to influence</p> <p>13 rising prevalence rates of autism, what</p> <p>14 date would you put?</p> <p>15 A. Today.</p> <p>16 Q. Today for all of these,</p> <p>17 correct?</p> <p>18 A. Well, every year that the</p> <p>19 CDC has monitored rates, it's gone up and</p> <p>20 up and up. So if the explanation, as</p> <p>21 I've proposed it or as it's been proposed</p> <p>22 by many, many, many people, and commonly</p> <p>23 accepted in the scientific community, you</p> <p>24 would see these -- the continued impact</p>	<p style="text-align: right;">Page 613</p> <p>1 were talking about regarding the</p> <p>2 prevalence rates, Doctor?</p> <p>3 A. Yes. And Mount Sinai</p> <p>4 doesn't say that. I would say it's the</p> <p>5 consensus in the scientific community</p> <p>6 that these are the factors that have led,</p> <p>7 for the most part, to the increase in</p> <p>8 prevalence.</p> <p>9 Q. But as it relates to these</p> <p>10 factors, you say the consensus in the</p> <p>11 scientific community, you were shown bits</p> <p>12 and pieces of a bunch of other articles</p> <p>13 talking about DSM-V and whether or not</p> <p>14 that influenced prevalence rates in the</p> <p>15 way you describe it. Help us understand</p> <p>16 that.</p> <p>17 A. So in science you have</p> <p>18 conflicting findings. But the totality</p> <p>19 of the literature, the totality of the</p> <p>20 evidence and certainly the consensus</p> <p>21 among scientists is that this is mainly</p> <p>22 artifactual.</p> <p>23 Q. A few quick questions on the</p> <p>24 e-mails that counsel was asking you about</p>

Page 614

1 at the very end of your deposition.
 2 Is it accurate that you were
 3 actually approached by the plaintiffs in
 4 this litigation at one point?
 5 MR. WATTS: Objection.
 6 Form.
 7 THE WITNESS: Correct.
 8 BY MS. BROWN:
 9 Q. Okay. And did you
 10 understand -- did you tell the lawyers
 11 representing the plaintiffs in this
 12 litigation that you believed
 13 acetaminophen could cause autism?
 14 A. No. I told them that I was
 15 willing to investigate the literature, to
 16 help answer that question.
 17 Q. Did you tell the lawyers
 18 representing the plaintiffs in this
 19 litigation that you ever formed the
 20 opinion that supports their litigation
 21 theory that maternal use of acetaminophen
 22 can cause autism?
 23 A. No. In fact, as I recall, I
 24 told them that my previous investigation

Page 615

1 of another exposure determined that, in
 2 fact, the exposure was not causal.
 3 Q. Were you ever retained by
 4 the lawyers representing the plaintiffs
 5 in this litigation?
 6 A. No. As I recall, an e-mail
 7 was sent saying that they would send a
 8 retention letter. I never received a
 9 retention letter, and I didn't assume to
 10 be retained by them.
 11 Q. Is your opinion based on who
 12 is hiring you?
 13 A. Absolutely not. My opinion
 14 is based on my evaluation of literature,
 15 which is based on my experience
 16 scientifically and clinically.
 17 Q. And similar to that you were
 18 asked a lot of questions about funding of
 19 scientific research and scientific
 20 articles.
 21 Are the results or the
 22 efforts of your scientific endeavors
 23 determined by who is funding them?
 24 A. No. I think it's always

Page 616

1 important to reveal and be transparent
 2 about potential conflicts of interest,
 3 which is what we do. Obviously,
 4 everybody comes to science with some
 5 biases that they have to be aware of.
 6 But by no means is my
 7 science dictated, determined, or
 8 influenced by the funder. Or at least
 9 not the outcomes. Maybe the nature of
 10 the experiment can depend on certain
 11 priorities, but the outcomes are
 12 dependent on the data.
 13 MS. BROWN: Dr. Kolevzon,
 14 that's all I have for you. Thanks
 15 so much for your time.
 16 MR. WATTS: A little bit
 17 more.
 18 - - -
 19 EXAMINATION
 20 - - -
 21 BY MR. WATTS:
 22 Q. Ready.
 23 Dr. Kolevzon, counsel for
 24 the acetaminophen manufacturers asked you

Page 617

1 about my questions concerning respectable
 2 institutions, Harvard, Yale, Johns
 3 Hopkins; you recall that, right?
 4 A. Yes.
 5 Q. Then you said that you don't
 6 think that any reasonable science could
 7 disagree with you, right?
 8 A. No. What I said is in the
 9 case of, specifically, acetaminophen
 10 causing autism, looking at the literature
 11 as it stands, I don't think a reasonable
 12 scientist could conclude that it causes
 13 autism.
 14 Q. Now, she pointed you to 520,
 15 which was a Mount Sinai press release
 16 that didn't mention acetaminophen, but
 17 she didn't mention Exhibit 466.
 18 MR. WATTS: Put that up.
 19 (Document marked for
 20 identification as Exhibit
 21 Kolevzon 466.)
 22 BY MR. WATTS:
 23 Q. This is a Mount Sinai press
 24 release that does mention acetaminophen,

Page 618

1 right?

2 MS. BROWN: Objection.

3 Misstates the document.

4 THE WITNESS: This is --

5 BY MR. WATTS:

6 Q. Is it a Mount Sinai press

7 release?

8 MS. BROWN: Same objection.

9 BY MR. WATTS:

10 Q. Yes?

11 A. Yes. We'd have to look at

12 the study, which is not --

13 Q. Is it titled, "Acetaminophen

14 Use"?

15 The first word of the whole

16 article is the first word of the title

17 that mentions acetaminophen, right?

18 A. So this is a different web

19 page, sponsored by a different site and

20 has nothing to do with autism.

21 Q. This document has nothing to

22 do with autism?

23 A. The study that the document

24 is based on is language delay in girls.

Page 619

1 Q. So with respect to

2 acetaminophen, 466 mentions

3 acetaminophen, and it has a quote from

4 Shanna Swan of the Icahn School, right?

5 MR. WATTS: Second page.

6 THE WITNESS: Okay.

7 BY MR. WATTS:

8 Q. And Carl-Gustaf Bornehag, a

9 professor at Karlstad University and

10 adjunct professor at the Icahn School.

11 MR. WATTS: Take that down.

12 BY MR. WATTS:

13 Q. There's Shanna Swan, and

14 then right below that is Carl-Gustaf

15 Bornehag, right?

16 A. So I'm familiar with the

17 study.

18 Q. Okay.

19 A. This is a study that has

20 nothing to do with autism.

21 Q. So Shanna Swan, Mount Sinai,

22 says, "Pregnant women should limit their

23 use of this analgesic during pregnancy."

24 And the adjunct professor at Icahn says,

Page 620

1 "New data suggests the use of

2 acetaminophen poses a risk for pregnant

3 women," right?

4 A. I don't think that's a

5 reasonable conclusion to draw based on

6 the evidence.

7 Q. But it's a conclusion by

8 reasonable scientists, right?

9 MS. BROWN: Objection.

10 Misstates testimony.

11 THE WITNESS: I think if a

12 reasonable scientist in this case

13 evaluated the totality of the

14 literature, they would not draw

15 that conclusion.

16 BY MR. WATTS:

17 Q. And if we look at the

18 consensus statement in 561, it was

19 written in part by an Icahn scientist,

20 Shanna Swan, right?

21 MS. BROWN: Objection to the

22 form.

23 BY MR. WATTS:

24 Q. Yes?

Page 621

1 A. Yes.

2 Q. And the 91 physicians that

3 were listed include Veerle Bergink, also

4 an Icahn scientist in 562, right?

5 A. If Shanna Swan or Veerle

6 Bergink evaluated the literature as it

7 relates to autism, prenatal use, and

8 acetaminophen, I don't think they could

9 reasonably conclude that it causes

10 autism.

11 Q. You know, that's why I used

12 Exhibit 562. I showed you all the stuff

13 that was evaluated by the consensus

14 statement group.

15 Remember all those tables,

16 five tables? Do you remember that?

17 A. Vaguely.

18 Q. I didn't take you through

19 that for my health. That was all the

20 stuff that they reviewed and listed what

21 they reviewed before coming up with a

22 conclusion that there was a need for

23 precautionary action regarding

24 paracetamol use during pregnancy, right?

Page 622

1 MS. BROWN: Objection.

2 Argumentive.

3 THE WITNESS: Disagree with

4 that conclusion.

5 BY MR. WATTS:

6 Q. Now, the difference between

7 you and them is after your school came

8 out with this press release, with this

9 consensus statement, those folks looked

10 at it and they weren't retained in

11 litigation, right?

12 MS. BROWN: Objection to the

13 form of the question as false.

14 THE WITNESS: I don't know

15 if they were retained or not.

16 They may have been retained for

17 the plaintiffs.

18 BY MR. WATTS:

19 Q. Well, between the time that

20 this consensus statement came out in 2018

21 until almost five years later when you

22 decided to go to work for Butler Snow,

23 did you do one lick of work with respect

24 to acetaminophen, one lick other than

Page 623

1 have your name on a book chapter that you

2 say you didn't write?

3 MS. BROWN: Highly

4 argumentive. I object.

5 BY MR. WATTS:

6 Q. Go ahead.

7 A. I think I've made it clear

8 that I did not start investigating the

9 relationship between acetaminophen and

10 autism, I did not find it plausible,

11 until recently.

12 Q. Did you ever tell

13 Mr. Tillery that you didn't find his

14 theory plausible? I didn't see an e-mail

15 that said that.

16 A. I think in the first e-mail

17 that I sent to Shanna Swan, I reflected

18 some skepticism but also agreed,

19 nevertheless, to dig into the literature,

20 because I was curious about the science.

21 Q. Now, since the Butler Snow

22 people have called you, your bills total

23 \$82,250 as of a month ago. Do you know

24 how much time you spent this month?

Page 624

1 A. I don't know how much time.

2 Q. What is your best estimate?

3 A. I don't want to guess.

4 Q. Well, I mean, you've been

5 here eight hours. How much time did you

6 prepare this week?

7 A. Several hours a day.

8 Q. Yeah. You remember the

9 supplemental thing. You've read all the

10 deposition reports -- I mean all the

11 expert reports, right?

12 A. Yes.

13 Q. And then you read all the

14 rough transcripts of the depositions,

15 right?

16 A. I spent a lot of time, yes.

17 Q. What's a lot of time?

18 What's your best estimate?

19 A. I don't want to make a best

20 estimate.

21 Q. Okay. Would you be willing

22 to send me your supplemental bill for

23 this time so we can have an accurate

24 description of what you billed as of the

Page 625

1 date of the deposition?

2 A. Sure --

3 MS. BROWN: Counsel.

4 THE WITNESS: I'm sure

5 defense counsel will provide it to

6 you.

7 BY MR. WATTS:

8 Q. Now, let me ask you this

9 next thing, this caution against blaming

10 mothers. Did you hear one word out of my

11 mouth saying I blame the mother?

12 A. No.

13 Q. Now, if the mother is not

14 warned about a risk, can she make an

15 informed choice as to whether to take a

16 pharmaceutical product or not?

17 MS. BROWN: I object to the

18 hypothetical.

19 THE WITNESS: I'm not in the

20 position of advising mothers

21 whether to take medicine or not.

22 BY MR. WATTS:

23 Q. The label that mom gets when

24 she goes to Walgreens or CVS or Walmart

<p style="text-align: right;">Page 626</p> <p>1 doesn't say one word about autism, does 2 it?</p> <p>3 MS. BROWN: Objection to the 4 form of the question.</p> <p>5 THE WITNESS: I'm a child 6 psychiatrist. I don't prescribe 7 medicine to --</p> <p>8 MS. BROWN: Let him finish, 9 please. Let him finish.</p> <p>10 BY MR. WATTS:</p> <p>11 Q. Yeah, but you saw it doesn't 12 say anything about acetaminophen causing 13 autism, does it?</p> <p>14 MS. BROWN: Objection to 15 form. Lacks foundation.</p> <p>16 THE WITNESS: To my 17 knowledge, the label of 18 acetaminophen does not say it 19 causes autism. Rightfully so.</p> <p>20 BY MR. WATTS:</p> <p>21 Q. Okay. Do you know what the 22 label over in Europe says about the 23 relationship between acetaminophen use 24 and autism spectrum disorder?</p>	<p style="text-align: right;">Page 628</p> <p>1 time.</p> <p>2 BY MR. WATTS:</p> <p>3 Q. Go ahead.</p> <p>4 A. Again, I don't find myself 5 in the position of advising moms.</p> <p>6 Q. Okay. Well, you made the 7 comments about moms, so...</p> <p>8 MS. BROWN: Counsel, I'll 9 give you the courtesy of a couple 10 more questions, but you're over 11 seven hours.</p> <p>12 MR. WATTS: Well, I have the 13 same -- no, it's seven hours the 14 first part, then I get the same 15 time as you. That's what the 16 order said, but I'm not --</p> <p>17 MS. BROWN: Okay. Okay.</p> <p>18 BY MR. WATTS:</p> <p>19 Q. Let me just ask you, with 20 respect to whether something is causal or 21 not, does cigarette smoking cause cancer?</p> <p>22 MS. BROWN: Objection to the 23 form.</p> <p>24 THE WITNESS: I'm not here</p>
<p style="text-align: right;">Page 627</p> <p>1 MS. BROWN: Objection to the 2 form.</p> <p>3 THE WITNESS: I'm not a 4 regulatory expert. I don't 5 prescribe medicine to pregnant 6 women, and I don't practice in 7 Europe.</p> <p>8 BY MR. WATTS:</p> <p>9 Q. Now, if a label says that 10 you should use this as judiciously as 11 possible given this risk, do you think 12 moms are just going to ignore that label?</p> <p>13 A. Again, I'm not in a position 14 to judge moms. I'm not in a position to 15 evaluate labels.</p> <p>16 Q. You would agree that there 17 is absolutely no basis to blame mom for 18 taking acetaminophen when she's not told 19 one word about acetaminophen risk of 20 autism, agreed?</p> <p>21 MS. BROWN: I object to this 22 whole line of questioning as 23 lacking foundation.</p> <p>24 And, Counsel, you are out of</p>	<p style="text-align: right;">Page 629</p> <p>1 to provide testimony on the 2 relationship between cigarette 3 smoking and cancer.</p> <p>4 BY MR. WATTS:</p> <p>5 Q. But assuming you were asked 6 in front of the trial, do you have an 7 opinion as to whether it causes cancer, 8 yes or no?</p> <p>9 MS. BROWN: Asked and 10 answered.</p> <p>11 THE WITNESS: I don't feel 12 comfortable providing an expert 13 opinion on that.</p> <p>14 BY MR. WATTS:</p> <p>15 Q. Okay. Fair enough. 16 With respect to 545.</p> <p>17 MR. WATTS: Put it on the 18 screen.</p> <p>19 By MR. WATTS:</p> <p>20 Q. And counsel wrote in 21 something about today and all that stuff, 22 and we'll have that.</p> <p>23 I'm just curious. We've 24 been here for eight hours. Are you able</p>

Page 630

1 to tell me about the percentage of the
 2 increased prevalence that is due to any
 3 of the five factors that you talked
 4 about?

5 MS. BROWN: You asked that
 6 nine hours ago. I object.

7 THE WITNESS: So I am not
 8 able, as I sit here, to isolate
 9 these five factors and tell you
 10 what percentage of a rate increase
 11 it is.

12 But we are able to look at
 13 the rate increase and we are able
 14 to see that the majority of that
 15 increase is due to these
 16 methodological factors.

17 BY MR. WATTS:

18 Q. Oh, and 12 percent of it is
 19 because of younger age of diagnosis.
 20 What other diagnosis rate increase are
 21 you going to give to any one of these so
 22 that we can add it up and see if it's
 23 close to 100 percent or not?

24 MS. BROWN: Asked and

Page 631

1 answered like nine times now.

2 THE WITNESS: Yeah, I think
 3 I've answered that question. I am
 4 not able, at this moment in time,
 5 to mathematically model the rate
 6 of increase per item.

7 BY MR. WATTS:

8 Q. Now, next-to-last issue.
 9 She asked you whether the plaintiffs'
 10 lawyers in this litigation approached
 11 you. You understand that Mr. Tillery has
 12 nothing to do with this litigation.

13 A. I have no understanding
 14 whatsoever of Mr. Tillery's role in this
 15 litigation or not.

16 Q. You are testifying in an MDL
 17 proceeding in the Southern District of
 18 New York; you know that, right?

19 A. Yes.

20 Q. And you know that
 21 Mr. Tillery is not one of the co-leads,
 22 is not on the plaintiffs' executive
 23 committee, not on the Plaintiffs'
 24 Steering Committee, has nothing to do

Page 632

1 with this litigation?

2 MS. BROWN: I object to the
 3 form as lacking foundation.

4 THE WITNESS: The only --
 5 no, I don't know what his role
 6 is --

7 BY MR. WATTS:

8 Q. Do you know whether --

9 MS. BROWN: Wait, wait, let
 10 him finish, please.

11 BY MR. WATTS:

12 Q. Do you know whether
 13 Mr. Tillery has even filed a single
 14 lawsuit?

15 A. I have no idea what
 16 Mr. Tillery's role is.

17 Q. Okay. So when she says the
 18 plaintiffs' lawyers in this litigation,
 19 in order to be in this litigation, you
 20 have to file a single lawsuit, right?

21 MS. BROWN: Objection to the
 22 form.

23 THE WITNESS: I have a sense
 24 that you're arguing with --

Page 633

1 BY MR. WATTS:

2 Q. Nope.

3 A. -- Ms. Brown.

4 Q. I'm not.

5 A. So, I'm sorry, what's the
 6 question?

7 Q. So this idea that
 8 plaintiffs' lawyers in this litigation
 9 approached you. Did I approach you?

10 A. No.

11 Q. Did Ashley Keller approach
 12 you?

13 A. No.

14 Q. Did Mark Lanier approach
 15 you?

16 A. No.

17 Q. Did any members of the
 18 plaintiffs' executive committee and the
 19 MDL appointed by the court approach you?

20 MS. BROWN: Objection.
 21 Lacks foundation.

22 THE WITNESS: No. I have no
 23 idea.

24 BY MR. WATTS:

Page 634

1 Q. Did any members of the

2 Plaintiffs' Steering Committee appointed

3 by the court approach you?

4 MS. BROWN: Same objection.

5 THE WITNESS: I have no

6 idea.

7 BY MR. WATTS:

8 Q. Okay. Now, this question

9 about your funding sources, do the

10 results of your scientific endeavors

11 relate to who funded them? You've done

12 no scientific research on the

13 relationship between acetaminophen and

14 autism outside of the litigation context

15 in this case; is that true?

16 MS. BROWN: Asked and

17 answered.

18 THE WITNESS: I have not

19 done research on the relationship

20 between acetaminophen and autism

21 outside of the context of this.

22 BY MR. WATTS:

23 Q. And in your CV, updated

24 however well it has been, it has grant

Page 635

1 applications with respect to grants that

2 are ongoing right now, right?

3 A. Yes.

4 Q. Have you sought any funding

5 from any third party to do scientific

6 research with respect to the relationship

7 between acetaminophen and autism?

8 A. I have not myself, no.

9 MR. WATTS: Okay. That's

10 all my questions. Thank you.

11 MS. BROWN: Nothing further.

12 Thank you so much, Doctor.

13 THE VIDEOGRAPHER: The time

14 right now is 5:42 p.m. We are off

15 the record.

16 *****

17 (Excused.)

18 (Deposition concluded at

19 approximately 5:42 p.m.)

20

21

22

23

24

Page 636

1

2 CERTIFICATE

3

4

5 I HEREBY CERTIFY that the

6 witness was duly sworn by me and that the

7 deposition is a true record of the

8 testimony given by the witness.

9 It was requested before

10 completion of the deposition that the

11 witness, ALEX KOLEVZON, M.D., have the

12 opportunity to read and sign the

13 deposition transcript.

14

15 MICHELLE L. GRAY,

16 A Registered Professional

17 Reporter, Certified Court

18 Reporter, Certified Realtime

19 Reporter and Notary Public

20 Dated: September 5, 2023

21

22 (The foregoing certification

23 of this transcript does not apply to any

24 reproduction of the same by any means,

unless under the direct control and/or

supervision of the certifying reporter.)

Page 637

1 INSTRUCTIONS TO WITNESS

2 DATE: September 5, 2023

3 Please read your deposition

4 over carefully and make any necessary

5 corrections. You should state the reason

6 in the appropriate space on the errata

7 sheet for any corrections that are made.

8 After doing so, please sign

9 the errata sheet and date it.

10 You are signing same subject

11 to the changes you have noted on the

12 errata sheet, which will be attached to

13 your deposition.

14 It is imperative that you

15 return the original errata sheet to the

16 deposing attorney within thirty (30) days

17 of receipt of the deposition transcript

18 by you. If you fail to do so, the

19 deposition transcript may be deemed to be

20 accurate and may be used in court.

21

22

23

24

Page 638

E R R A T A

PAGE LINE CHANGE

REASON: _____

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Page 639

ACKNOWLEDGMENT OF DEPONENT

I, _____, do

hereby certify that I have read the

foregoing pages, 1 - 640, and that the

same is a correct transcription of the

answers given by me to the questions

therein propounded, except for the

corrections or changes in form or

substance, if any, noted in the attached

Errata Sheet.

ALEX KOLEVZON, M.D. DATE

Subscribed and sworn

to before me this _____ day of _____, 20____.

My commission expires: _____

Notary Public

Page 640

LAWYER'S NOTES

PAGE LINE

1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		

<u>WORD</u> <u>INDEX</u>				
< \$ >	310:14	549:16	109 11:17	206:10
\$10 551:20	345:5	10,000 117:9	433:12	207:13, 24
\$20 554:20	491:10	10.0 179:12	569:3 570:4	208:10
\$25 26:15	493:20	10.3 179:13	109-153	209:5
389:4	494:10, 15	10:00	22:12	210:19
390:15	495:13	134:11	10940 2:21	353:11
391:13	504:13	100 2:21	10th 539:23	504:22
\$265,000	569:2, 22	224:6	11 20:14	630:18
438:23	576:7	237:15	39:19	12:43 350:2
\$4.3 400:17	608:10	239:23	42:13	120 40:1
\$82,250	612:3, 13	264:12, 14,	63:17	242:23
623:23	639:6	17 273:12	99:15	1200 2:8
	1,000 179:11	274:15	274:20	6:19
	1.13 170:19	275:22	442:11	121 100:22
	1.19 605:23	276:8	443:1	101:1
	1.20 470:8	277:14, 15	452:3	122 13:11
< 0 >	1.3 426:15	320:10	462:14	123 523:20
0.14 160:13	1.32 470:7	323:3	504:24	1-23.PDF
0.66 170:18	1.39 464:21	325:3	520:22	20:15
000102_108.	1.46 470:8	366:21	577:24	124 523:3, 7
PDF 26:23	1.6 14:15	403:23	578:3, 6, 8	125 523:6
000109	160:15	444:8	11.0 179:16	126 3:4
28:12	501:19	574:12, 18,	11.5 175:10	420:1
000307	1.65 464:21	20 575:15	11.7 179:16	127 23:6
28:12	1.75 208:3	577:21	11:02 218:3	129 32:9
	1.77 193:22	608:16	11:10 218:7	12th 6:11,
< 1 >	1.85 170:19	630:23	110 127:3	18
1 1:8	1:22-md-	10001 5:12	418:16	12-year
27:14	03043 1:5, 7	10017 4:17	1105 5:19	132:12
32:13 37:3,	1:32 350:9	5:5 6:11	111 419:5	13 80:11
16 39:16	10 39:19	10019 5:19	112 419:12	83:6 193:8,
96:8, 9	67:14	10022 3:5	114 12:13	14 372:19
99:11	73:10	101 31:12	115 569:4	433:13
127:3, 5, 16	139:8	574:19, 22	570:4	513:5
129:12	233:20	102 420:6	1188 341:17	131 28:6
131:13	283:9, 10	572:1, 3, 14	11-KAPRA	133 528:19
149:4	321:15	580:22	23:12	135 420:22
176:18	323:15, 17	1027 290:5	12 39:19	136 28:14
193:8, 17	325:5, 18	106 10:6	99:11	420:23
266:7	370:16	107 21:6	133:15	421:24
293:8, 11	473:21	571:23	160:23	13th 575:18
294:8, 19, 21	490:15	108 569:2,	181:17	14 99:17
303:1	505:1	23 571:23	182:1, 11	260:22
306:23		580:22	193:19	

520:22	17 33:9	487:6	1ST 13:13	179:10
140 364:7	37:15	193 20:20	34:8 268:6	193:22
141 364:8	135:16, 19	194 22:20	588:6, 8	203:11
147 13:6	370:16	1943 108:14		206:14
14th 60:6	372:20	195 23:19	< 2 >	207:12
575:22	170 25:14	1977 484:5	2 11:10	211:17
579:22	1700 6:4	198 49:6	36:4 54:14	212:20
15 165:4, 12	172 21:12	1980 141:16,	96:5, 10	213:16
260:22	176 14:18	18 142:9	99:16, 19	260:5
268:17	177 143:16	168:8	108:3	262:10
287:12	17th 581:5,	1987 141:12,	129:4	266:4
317:16, 17	11 583:2, 5,	20 165:16	176:19	278:7
321:15	7, 16	167:21	179:9	322:3, 15
325:6	18 39:20, 22	224:7	187:24	323:6
352:6	40:16	1988 164:12	228:10	324:8
433:13	67:16	1989 138:20	235:9	325:6, 18
573:5, 22	157:11	140:7, 18	293:11	421:19
150 4:8	201:15	141:4	294:21	429:12
127:5	202:3, 5, 16,	199 51:5	303:3	455:21
155 352:6	23 210:14	1990 117:10	355:14	456:12
157 472:1	352:6	119:21	380:3	484:4
15q 313:23,	419:17	160:11	391:2	590:23
24 314:6	18.1 193:24	231:8	492:3	608:6, 9, 12,
15q11	181 15:13	1990-1992	494:10	17 609:1
314:17	183 16:6	221:12	496:23	639:20
15th 42:5	187 16:16	1991 137:7,	497:5, 12	2000 7:22
58:13 60:7	44:7 536:17	10 160:13	514:7, 12	27:18
508:1	19 40:16, 17	211:15, 21	534:13	123:21
572:16	168:3	1992 234:2	545:4	124:3
581:4, 10	173:2, 5, 19,	1994 141:23	608:11	20004 6:19
16 67:16	22 333:17	160:13	2,000 455:19	20006 6:5
135:15, 19	375:10	165:16	2.27 170:20	2001 117:11
202:9	519:12	167:22	2.4-fold	119:21
276:19	190 20:10	224:7	161:6	2002 10:22
391:5	481:20, 22	1996 43:4	2:19 410:23	11:8
455:21	1901 3:16	160:11	2:27 411:3	170:19
456:12	191 44:22	1997 108:23	20 13:13	212:2
539:4	469:22	143:17	40:16	213:2, 20
541:18	470:1	1R01ES0269	99:21	214:13
160 53:9	484:17	04-01-	114:24	215:1, 13, 17
167 420:5	192 20:16	REICHENB	116:4	218:15
16th 40:3	46:6, 12	ERG 17:8	117:6	222:5
433:18	484:1, 17		143:6	223:9, 17
439:10			170:17	225:21

227:20	20080000-	20120701-	2016 170:19	MOUNT
228:5	MOY 12:10	PUELO	187:6, 17	17:11
231:22	2009 123:23	14:7	337:1	20170712-
584:12	124:3, 5	2013 142:1,	551:18	VIKTORIN
20020600-	158:8	9, 11 168:13	20160216-	18:10
CROEN	233:23	170:4, 7	BENNETT	20171116_VI
10:15, 19	240:20	171:20, 22	16:16	DEO_KOLE
200-2900	300:12	174:4, 6, 14,	20160908-	VZON
3:11	20090109-	15 180:24	AUTISM	17:15, 18, 22
2003 11:11	CONE	289:15, 23	16:20 17:7	18:7
138:24	12:18	292:3	2016-2021-	2017-
140:7, 19	201 523:21	501:17	ABSTRACT.	ASSOCIATI
141:4	2010 488:3	502:9	PDF 17:9	ON 18:11
169:10	491:5, 6	20130000-	2016-	2018 20:14
170:6	20100622-	NEUROBIO	MEASURIN	73:11 76:6
228:4	AVCHEN	LOGY	G 16:13	107:23
231:20	13:7	14:10	2017 27:14	127:13
584:22	2011 52:10,	2013000-	320:22	170:20
20030400-	11 122:16,	THE 14:14	357:14	190:8
BLAXILL	19 132:5, 11	2013-'14	401:12	191:20
11:7	133:2	291:24	409:9	192:5
2005 143:17	156:1	2014 15:11	439:9, 10	193:19
234:2	260:14	175:3	539:4, 22	235:16
2006 456:21	273:23	178:17	541:13, 18	276:19
2007 108:23	288:22	259:20, 21	542:11	308:18
109:20	289:8	268:7	2017_ALEX_	322:9
124:5	353:10	288:17		324:9
137:15, 18,	455:20	409:9	CLIP_3.MP4	332:24
22 138:4	2011)41-227-	20140300-	17:16	359:10
157:19	236 13:10	MAENNER	2017_ALEX_	428:10, 24
201:13	20110000-	14:19		429:4
202:2, 10, 15,	TEXTBOOK	20140501-	CLIP_5.MP4	436:18
24 287:13,	13:12	PINTO 15:7	17:20	453:7, 13
24 288:19	20111100-	20140800	2017_ALEX_	454:13
291:5, 13	PINTO-	15:18		622:20
293:1	MARTIN	2015 16:10	CLIP_6.MP4	20180000-
611:6, 8, 9	27:16	183:12, 21	17:23	MT 18:14
20070400-	2012 346:19	378:21	2017_ALEX_	20180110-
KOLEVZON	352:21	20150600-		ACETAMIN
11:18	515:23	ZANDER	CLIP_7.MP4	OPHEN
20071100	534:2	16:7	18:8	19:7
12:7	20120000-	20150904-	20170000-	20180223-
2008 170:19	MOUNT	TAVASSOLI	BOOK-	KOLEVZON
179:12	13:17	16:12		19:12

20180228	458:18	365:20	133:2	207-215.PDF
19:21	472:4	366:17	168:13	10:22
20180228_VI	484:5	367:12	170:8	2090100-
DEO_KOLE	513:4	392:14	235:18	THE 12:14
VZON	518:22	411:12	285:13	20-plus
19:15, 18	542:13	423:8	324:10	610:20
20180403-	543:23	442:3	328:16	20-some-odd
KOLEVZON	2020;25	446:6	344:12	529:7
20:7	22:11	486:22	369:15	21 37:18
20180427-	2020000-	508:2	391:5	39:3
BAIO 20:10	PREM 22:7	536:9	402:24	333:17
20180504-	20200804-	571:14	403:11	364:8
CARTOLAN	KOLEVZON	573:22	409:8	453:7, 14, 18,
O 20:17	22:14	20220000-	505:6	19
20180619-	20201007_VI	TEXTBOOK	553:4	210 2:9
FONBOMM	DEO_KOLE	23:10	636:15	21052 7:4
E-	VZON	20220117-	637:2	212 3:5
EDITORIAL	22:17	DATTARO	2023.PDF	5:12
20:20	2021 79:22	23:16	18:16	213 221:6
20181029-	127:19	20220407-	20230000	213.542.8000
SALDARRI	129:8	CDC-KEY	32:7	7:16
AGA 29:7	134:16	23:20	20230000-	214 216:20
20181108-	194:18	20220516-	MT 25:11	217:6, 16
REPORT	282:24	MOUNT	20230117-	220:14
21:7	368:12	24:7	LASALLE	217 217:5,
20181207-	470:9	20220516-	25:14	12 218:16
KOLEVZON	514:8	OUR 24:11	20230216-	217-224
21:10	545:19	20220516-	AM-	10:17
2019 77:18	595:23	TOP 24:13,	PALMQUIS	218 2:15
389:1	20210100-	17	T 25:19, 22	10:14
409:8	KARLA	20220603-	20230225-	219 219:12
524:19	22:21	DR 24:20	KHACHAD	538:11
20190000-	20211200-	20220630-	OURIAN	21st 40:7
ROGERS	BAUER	MT 31:19	26:7	581:20
21:12	31:10	20220904-	20230701-	582:16
20190610-	20211200-	KOLVEZON'	KOLEVSON	22 302:22
ADDO	PARACETA	S 25:7	10:7	505:6
21:16	MOL 31:7	2023 1:8	20230721-	220 10:19
202 6:6, 20	2022 40:19	34:8 37:18	KOLEVSON	223 11:6
202.776-	42:5, 20	39:4 40:3	10:12	223-226.PDF
5236 7:22	44:24 45:6	47:23	2030721-	11:11
2020 131:12	58:14 63:6	130:5	KOLEVSON	224 217:6,
352:5	101:9	131:10	10:9	13
363:10	195:21	132:5, 11	207 220:13	

225-232.PDF 17:13	24-week 418:19	288 547:9, 18	30 234:19 235:2	34 412:9 413:4
226 224:17 321:12	422:1	289 14:9 547:19	262:10	341 12:6
227 11:13 321:8, 11	25 193:6 235:16	289-1313 6:20	267:9	342 12:10
229 232:14	285:13	28-fold 578:4	325:21, 22	349 17:6
22nd 388:24	316:7	159:15	392:14	35 9:7, 17 188:4
581:24	332:3, 11	28th 436:18	608:12, 18	203:11
22q11 318:24	391:2	29 285:13	637:16	412:14, 16
22q11.2 318:16	403:11	294 26:19	300 3:10	413:4
22q13 318:24	250 319:10, 14, 23	296 29:6	301 19:21	442:17
22q13.3 302:12	320:11	2ND 23:11 27:22	303 7:11	556:1
23 285:2 391:1	2500 458:8	282:24	3043 1:3	35,000 420:4
420:9, 16	251 182:9	< 3 >	306 28:18	352 22:13
512:2 526:2	258 15:18	3 10:17 37:14 38:4	308 19:14	353 14:6
233 152:1	25- ANGARITA 17:12	96:10	30-minute 571:15	357 18:10
235 10:9 147:11	25th 130:5 323:15	99:22	577:19	359 18:18
148:18, 22	324:10	110:8	581:4, 5	36 131:13 215:18
149:3 151:1	25-year 450:16	114:23	30s 67:19	216:1, 12, 21
236 151:24	26 37:17 39:3 54:15	116:4	30th 79:22 402:24	217:1, 5, 10
239 274:5	61:15	117:6	574:24	218:11
24 33:6 187:24	63:13, 23	203:14	575:7	219:4
201:16	64:5 322:9	206:14	31 265:15	220:18
202:5, 16, 23	26(a) 402:11	207:12	312 4:9	267:8, 10, 14
210:15	26(a)(2)(B)(iv) 54:21	235:9	32 10:17, 22 100:3	268:22
218:16	263 29:15	242:8	218:15	270:5
242:13	263,775 193:23	258:20	411:21	412:21
391:1	267 15:6	259:23, 24	412:2 413:4	413:4
416:6, 13	27 20:14 156:13	362:6	321 17:10	419:18
418:12	316:7	382:1	326 110:1, 11	612:4
419:19	277 29:12	419:8	33 11:10 412:6 413:4	36.97 182:13
421:8, 19	28 183:20	472:1	330 33:6	36104 2:15
240 12:17	308:17	494:10	331 287:19	362 20:6
244 288:24 289:6	282 29:17	497:21	288:11, 12	3636 184:11, 18 185:9
		502:17, 18	332 25:22	3640 184:3
		514:7, 12	333 21:9	3641 186:2
		545:4	334 2:16	368 353:14
		3:45 508:20	336 27:6	37 9:20 10:12
		3:59 508:24		100:12, 16
				188:5
				216:19, 22

217:1	458:22	411 11:13	43 163:22,	452 17:6
218:18	459:6 611:3	24:20	23 164:6	348:24
370 7:10	400 9:17	227:15, 18	268:18	349:6, 8
26:11	35:23 36:2	228:1	430 14:9	453 17:10
375 16:20	38:16	414 11:17	289:16, 19	321:2, 5
379 23:15	401 9:20	109:10, 14	431 14:14	45-3634-
38 216:19,	18:6 37:8,	287:14, 18	501:20, 23	3643.PDF
22 217:1	11 555:1	415 12:6	433 14:18	16:10
218:18	403 10:6	341:7, 12, 15	25:19	455 27:15
260:1, 20	106:17, 20	416 12:10	175:24	456 17:14
261:3, 6	107:3	342:12, 17	176:4	539:3, 8, 11
582:20	135:15	417 12:13	177:20	458 17:18
389 26:14	156:17	22:6 114:1,	434 15:6	541:17, 21
39 135:16,	157:8	4 115:6	267:21, 24	459 17:21
19	163:23	158:6	435 259:6	439:7, 13
390 6:10	211:17	205:20	436 19:17	45th 7:15
391 26:6	285:4	418 12:17	437 15:13	46 211:18,
392 31:18	415:4	240:14, 17	180:24	20
394 32:6	416:7, 13	42 97:6	181:3	460 18:6
3rd 411:12	523:2	157:5, 6, 12,	437-	401:6, 9
	404 10:9	13 387:10	20140621-	463 18:10
< 4 >	234:20, 24	42.5 117:11	STURMEY	357:9, 12, 19
4 87:10	235:5	118:9 119:4	15:13	464 18:13
96:10	530:24	42/52	438 15:18	425:14, 21
100:4	531:3	164:21	258:13, 18,	465 18:18
160:16	585:10, 16	420 13:6	21 259:3, 14	359:12, 15
323:12	405 10:12	147:11, 14	439 17:21	466 19:6
342:19, 21,	38:1, 3, 4, 24	4200 7:9	44 168:3	617:17, 21
22 352:5	39:11	421-2800	288:8	619:2
419:8	438:21	3:5	440 3:16	468 19:11
438:22	408 10:14	422 13:11	442 289:2, 3	429:11, 15
494:10	218:21	122:8, 11	443 16:6	469 19:14
498:20	219:1	274:3	183:12, 15	308:12, 21
513:3, 5	220:21	288:23	445 16:12	47 123:5
518:22	409 10:19	289:6	546:15, 18	211:20
555:24	220:3, 8, 10,	424 13:17	447 16:16	215:20, 24
4,222 193:22	21, 24 221:5	534:1, 8	187:7, 10	470 19:17
4,236 193:22	222:1	425 4:16	447-0500	436:10, 14
4.75 582:7	41 23:10	5:5	2:9	472 19:21
4.83 160:12	27:20	426 18:13	45 582:6	301:4, 7
4.90 160:12	96:13, 16	539:7	45,300	474 20:6
4/62 164:22	410 11:6	429 14:6	426:14	361:17, 20
40 443:18	223:10, 13	19:11	451 16:20	4747 3:9
451:7	4100 4:8	353:1, 5	374:21, 24	

475 20:10 190:8, 11 191:17 476 20:16 192:5, 8 477 20:20 192:24 193:3 479 21:6 107:16, 20 127:10 139:6, 10 233:18 453:15 549:9 48 97:20 526:3 480 21:9 333:11, 15 481 21:12 172:18, 21 524:23 482 21:15 530:17, 20 484 21:18 525:4, 6 485 22:6 417:5, 8 486 22:13 351:24 352:3 364:7, 11 471:24 513:5 519:11 488 29:20 489 22:17 542:14, 17 489-6304 3:17 490 22:20 194:14, 17, 20	491 23:6 127:19, 22 128:2 134:16 368:13 459:23 464:18 472:13 502:16 514:12 545:3 494 23:10 41:18 46:9 63:3 422:11 458:6 469:24 481:22 484:2 601:7, 18 496 23:15 379:12, 15 498 23:19 195:20, 24 4th 472:4 < 5 > 5 15:11 33:10 77:18 96:11 100:13 268:6 345:22 364:8 371:17 403:12 458:8 499:8 531:21 532:2 636:15 637:2	5.02 160:12 5.12 160:11 5.16 160:11 5.18 160:12 5.23 160:11 5:01 592:24 5:11 593:4 5:42 635:14, 19 50 100:19, 21 143:14 265:12, 13, 19 280:6 326:10, 17, 20 416:8, 14, 22 443:8, 21 444:6 451:4, 6 500 24:6 320:11 554:11, 15 501 24:11 555:2, 6 556:6 502 14:14 24:13 555:2, 9 557:2, 5 503 1:14 24:16 34:11 555:2, 12 557:3, 9 504 24:20 411:7, 10 506 25:6 568:16, 20 569:1, 15 571:20 572:8, 9 50-item 547:22 51 285:3	510 25:10 553:10, 13 563:9 511 25:14 170:9, 12 344:7, 13 512 25:19 433:12, 16 513 25:22 332:2, 6 391:1, 9 514 26:6 369:21, 24 52 164:13 520 26:11 503:19, 23 599:7, 15 612:16 617:14 521 26:14 388:19, 22 522 26:19 293:17 294:2 525 21:18 26:22 580:16, 19 526 27:6 336:14, 17 528 27:9 551:12, 15 530 21:15 27:12 54:7, 11 532 27:15 454:24 455:3 534 13:17 539 17:14 31:16 54 27:12 129:12 542 17:18 22:17	27:20 41:9, 13, 15 543 28:6 131:18 132:2 544 28:9 568:16, 23 569:3, 13 570:4, 23 571:20 545 28:14 32:14 136:6, 10 141:2 156:3 237:2 610:8 629:16 546 16:12 28:18 297:9, 14 306:4, 9 547 29:6 296:12, 17 297:3, 14 548 29:12 277:22 278:1 297:9 321:24 549 29:15 263:6, 21 264:2 276:11 550 29:17 282:19, 22 551 27:9 553 25:10 554 24:6 555 6:18 7:15 24:11, 13, 16
--	---	---	--	--

556 29:20 488:2, 7 490:10, 14 557 30:6 72:17, 21 558 30:11 77:1, 4 559 30:15 79:7, 10 56 208:14 242:21 560 30:19 86:14, 17 131:6 595:23 560's 597:5 561 31:6 92:24 93:3, 14 620:18 562 31:9 94:21, 24 621:4, 12 563 31:12 101:3, 6, 16 564 31:16 539:22 540:2 565 31:18 392:2, 5 566 32:6 394:3, 6 567 123:9 568 25:6 32:9 38:16 122:21, 22 123:4 129:18, 21 130:3 285:13 323:12 387:8 403:9 569 28:9 56th 3:4	57 98:4 570 426:15 580 26:22 585 33:9 59 127:16 266:8 591 33:10 592-1500 7:11 593 9:8 5TH 18:20 < 6 > 6 165:3, 12 242:8 243:21 375:10 472:1 513:5 534:21, 24 6.2 117:10 118:8 119:3 6.5 164:23 6:43 575:23 60 203:15 60,000 83:2 600 243:2 60606 4:9 606-2996 5:20 61 100:21 426:19 427:11 612 32:13 617 9:7 618 19:6 62 164:15 165:3, 12 63 359:20 360:1 64 268:19 640 639:6 64112 3:10	646 4:17 5:6, 20 6:12 659-5200 2:22 67(6 20:15 677-694.PDF 15:11 68 208:16 523:19 685 208:1, 16 209:5 69 523:3, 18 6th 3:4 < 7 > 7 36:22 131:2 316:8 429:11 442:13 443:2 459:23 465:22 499:21, 22 505:1 542:13 582:20 70 257:7 607:12, 23 700 7:21 210:20 243:2, 21 713 2:22 3:17 72 30:6 73 427:21 428:13 528:18 735-3000 5:12 737-0500 6:6 74 528:18	741-5220 4:9 746-2000 6:12 75 582:5 77 14:10 30:11 264:15 277:16 289:24 77002 3:17 77064 2:22 78257 2:9 79 30:15 794 139:17 7-A 453:22 < 8 > 8 20:12 39:9, 16, 19 131:7, 8 158:13, 23 159:2 323:17 325:5 418:12, 19 421:8 422:1 453:7 458:9 505:1 8:31 1:14 34:9 80 98:11 256:23 264:16 277:18 278:13 366:19 405:1 420:6 607:12, 21 608:14 609:4	80202 7:10 81 164:21 810 5:18 816 3:11 818 7:5 82 98:18 333:12 83 429:11 519:11 837-5151 4:17 5:6 85 520:21 856 360:7 86 30:19 875 2:8 877.370.3377 1:19 8th 107:23 < 9 > 9 39:19 108:6 127:12 158:13, 23 159:4 193:8, 14 233:20, 22 472:13 473:12 505:1 519:11 9.6 179:13 9/22/22 28:10 9:40 134:7 90 318:19 405:1 607:23 608:14 609:4 900 6:5 90071 7:16 901 7:21
---	---	---	---	---

91 68:20	177:5	115:3, 18	accepts	31:14 45:1,
95:15 96:9,	209:4	181:5, 11	144:22	3, 16 50:13,
12 98:23	237:4, 8	207:5	access	17 58:4
621:2	239:11	298:1	176:16, 24	60:15
91367 7:4	243:8	342:24	177:10	68:12, 22
917.591.5672	291:6	343:1	259:18	73:11
1:19	320:14	417:23	553:18	75:23
93 31:6	333:1	525:20, 21	accompanies	77:12
94 15:10	334:2	abstracts	513:10	79:20
31:9 108:3,	386:16	348:24	accomplishm	80:14 81:3
6 127:12	391:20	349:9	ent 70:12	82:19
139:8	393:24	abuse	account	83:18
233:21	546:10	360:14	170:24	84:13
268:6	589:10	454:5 483:3	230:15	85:13 86:4
453:7, 14, 20	605:13	Academy	242:22	89:17
549:16	608:10, 11	137:19	280:6	90:19
95 179:12	629:24	201:13	293:8	91:14, 19
954-7555	630:8, 12, 13	Acadia	443:22	92:10
2:16	631:4	561:20, 21	444:9	94:11
95th 470:8	abnormalitie	accept	accounted	101:13
97 501:19,	s 330:5	58:14	236:9	104:1, 2, 20
20	331:12	558:18	238:7, 23	105:23
999-2232	332:15, 22	acceptance	accounting	106:11
7:5	335:15	236:23	294:7 443:8	240:3
< A >	ABRAHAM	accepted	accounts	273:18
a.m 1:14	13:14 56:7	94:16	224:22	299:5
34:9 134:7,	128:22	143:24	293:11, 15	338:22
11 218:3, 7	Absolutely	144:6	accuracy	339:3
575:23	53:5 56:21	162:1	484:14	348:4
A.PDF	61:24	213:8	accurate	367:4, 22
11:21 12:12	65:11	214:1, 5	257:10	388:5
A1C 399:6	70:14	246:19	395:24	423:4
abide 61:24	189:15	250:5	614:2	445:15, 19
ability	263:10	361:13	624:23	446:7, 12, 19
74:11	264:12, 14	442:21	637:20	447:5, 9
139:24	277:15, 16	444:13	accurately	507:22
140:8, 16	408:15	457:18	150:13	509:20
354:10	409:19	467:17	152:19	510:3, 9, 16,
506:21	612:7	471:15	155:2	22 514:18,
549:10, 23	615:13	480:24	611:11	23 515:17,
able 150:12	627:17	517:8	ACETAMIN	20 521:7, 18
155:16, 17	abstract	529:11	OPHEN	529:22
159:11	93:21	607:20	1:3 21:16	532:6
	110:13	611:23	30:7, 17	535:7, 15, 17

536:5	acknowledge	105:10	Addo	ADVANCE
537:18	135:20	161:7	530:16	24:8 502:6
550:13	229:2	259:2	531:8, 13	advanced
578:20	231:20	281:5	address	423:22, 23
580:8	acknowledge	426:8	448:4	442:4, 16, 21
594:20, 23	d 228:23	540:14	592:4, 14	443:16
595:5, 18	ACKNOWLEDGMENT	587:9	addressing	444:13, 14
597:18	639:2	588:1	230:6	ADVANCES
598:14, 18	acknowledg	590:22	ADHD	12:11
599:12, 18	ments	597:18	45:11 77:8,	401:11
600:1, 3	310:10	Adams	14 78:16	439:8 539:4
601:1	acquiring	531:7	82:21	ADVANCES
604:22	82:2	adapting	439:17	_IN_AUTIS
605:2	acronym	408:1	521:21, 24	M 17:15, 19,
606:9, 11	356:15	adaptive	522:1	22 18:7
609:21, 23	Act 211:23	185:20	ADHD-	ADVANCIN
614:13, 21	361:2	add 64:15	HUB.PDF	G 14:7
616:24	362:8, 19	83:12	30:14	353:7
617:9, 16, 24	363:16	176:21	adiposity	360:8
618:13, 17	acting	208:15	545:9	423:24
619:2, 3	457:21, 22	237:14	ADI-R	442:7
620:2	Action 95:6	293:14	138:11, 22	448:16
621:8	476:5	485:15	adjunct	advantage
622:24	530:1	494:3	99:4	312:4
623:9	621:23	497:23	619:10, 24	547:15
626:12, 18,	activate	630:22	adjusted	adverse
23 627:18,	518:7	added	50:21	356:22
19 634:13,	activation	237:22	administer	498:21
20 635:7	300:16	553:4	547:16	528:23
Acetaminoph	actively	addition	Administrati	533:19
en/Tylenol	342:10	213:15	on 379:4	advice
34:14	418:21	360:13	380:4	92:13 599:1
achieved	activities	451:19	ADOLESC	Advil 91:13
391:13	436:9	498:21	ENTS 27:17	advise
achieves	activity	548:11	455:18	327:6 335:9
438:2	300:15	554:3	adopted	advised
acid 423:5	517:14, 19	601:18	161:13	599:2
425:11	518:9	additional	542:20	advising
426:3, 11, 17	acts 462:9	153:3	ADOS	625:20
427:3, 8, 10	525:21	157:15	138:9, 18	628:5
431:1, 6	529:22	422:22, 23	139:22	advisor
600:17	actual	ADDM	549:3, 10, 20	561:7
acids 355:21	77:22	144:10	adult 420:13	
			ADV 22:11	

Advisors	232:20	608:9	500:6, 15	Ah 110:16
558:5	236:21	623:23	501:3, 9	122:12
advisory	242:11, 15,	630:6	510:1	311:15
560:22	17 353:7	agree 44:19	518:23	ahead 52:1
562:3	354:9, 10	65:5, 13, 16	519:4	55:11
AF.PDF	355:5	75:12	520:1, 6	59:14 65:1
29:21	360:9	81:16	522:8	84:22
affect	362:13	90:10	526:18	112:5, 11, 23
228:19	382:6	124:13	527:22	113:6, 7
359:2	423:14, 23	132:10	528:9	118:2, 21
377:16	424:1	133:19	529:21	125:6, 9
490:20	442:4, 7, 16,	171:17	530:2, 6	126:16
513:23	21 443:6, 17,	180:15	532:23, 24	130:10
519:1	18 444:5, 13,	225:8	533:8, 15, 22	144:4
520:3, 11, 12	14 448:16,	232:15	548:18	146:10
521:2	19, 24	244:5, 7	549:12	214:18
528:12	449:17, 18	245:12	600:10	227:6
545:14	451:14	255:4	602:5	270:22
affiliated	452:1	267:1	603:15	304:14
89:5	548:4	279:17, 22	607:1	308:7
affiliations	630:19	280:21	627:16	347:24
358:5	AGED	284:14	agreed	404:18
afternoon	20:12	285:18	57:16	448:6
391:5	129:13	293:22	75:14	449:12
AGE 12:15	agency	337:21	113:15	463:13
14:7	602:11	341:8	169:13	475:12
111:22	agenda	382:11	170:4	477:4
115:9	578:7	383:8	254:5	559:12
117:9	agent 252:5	384:8	281:15	566:9
137:13, 17	272:3	407:20	291:8	576:13
159:18, 23	355:19	417:14	517:13	587:3
160:4, 5, 7,	385:21	418:13	521:22	590:16
10, 20, 22, 24	agents	419:1, 9, 20	533:20	623:6 628:3
161:1	359:4, 5	420:19	535:20	AI 84:4
201:11	398:10	421:9, 21	594:2	AID 23:17
205:21	469:11	458:13	599:11	379:20
206:9	ago 63:9, 11	481:9, 17	623:18	380:7
207:13, 23	234:8	482:5, 12	627:20	air 423:5
208:4, 9	286:19	491:20	agreement	483:24
209:2, 14	485:12	492:9, 16, 18	562:18	Aishworiya
210:16, 23	505:10	493:9	AGRICULT	531:8
226:6	512:2	494:14	URAL 29:9	AL 11:8
228:13	514:8	496:1	297:21	14:7 16:13
229:5	601:6	497:15, 24		18:10

31:10	alleviate	altogether	160:2, 19	545:6, 22, 24
159:14	135:4	151:3	230:18	546:4
161:9	Alli 130:20	235:19	411:24	animals
193:19	132:8	326:7	413:5	100:10
224:11, 18	188:18	AM404	414:8	493:3
228:12	205:2	518:6	421:3	546:7
229:2	334:22	AMANDA	473:16	597:16
230:7	589:23	4:4	502:17	Ann 138:23
232:16	593:12	amanda.hunt	analytic	571:2, 10
Alabama	Alliance	@kellerpost	291:10	575:10
2:15	6:14	man.com	608:20	announceme
alcohol	ALLISON	4:10	analytics	nt 555:14
360:14	5:9	AMENDED	320:20	ANNOUNCE
454:5	allison.brow	9:18 36:2	analyze	MENT-PAR-
482:15, 20	n@skadden.c	AMERICAN	298:22	14-203.PDF
483:3, 7, 10,	om 5:13	15:10	535:14	16:22
12, 14, 16	allow 155:6	137:19	analyzed	Answer
500:2, 21	176:23	201:13	224:11	33:5 48:20
Aleve 91:13	385:22, 24	268:5	233:6	53:17 57:2
ALEX 1:13	allowed	AMERICAN	299:19	74:22
9:3, 18	291:17	.PDF 12:19	analyzes	76:11 86:7
10:7, 9, 12	allowing	AMO-1	380:13	87:15 89:1
34:16 35:2,	53:2	301:19	analyzing	105:1
10 636:8	ALTER	amount	77:10	112:9
639:16	29:21	92:11	82:23	118:16
ALEXANDE	80:17	391:16	382:2 509:4	133:15
R 13:15	253:14	607:24	and/or	150:13
14:11, 17	377:12, 15	analgesic	346:21	152:20
21:7 51:14	490:19	45:7 76:3	636:21	153:1
199:7	493:18	509:21	Anderson	154:7
357:21	alterations	619:23	566:23	159:11
570:24	451:17	analogies	Angarita	162:14, 17
Alice 247:17	altered	305:17	320:23	163:2, 6
Alkermes	250:13	analogy	Angeles	167:6
561:23, 24	377:22	305:12	7:16	170:6
allegation	415:6	399:17	Angelman	172:9
48:6	416:17	412:23	313:13, 19	181:8
alleged	545:11	478:13	314:17	184:17
407:2	altering	analyses	Animal	190:13
allegedly	492:7	50:21 225:2	359:22	195:12, 14
413:23	alters	ANALYSIS	538:11, 21	196:4
ALLEN	252:17	16:17	542:2, 5	200:19
2:12	270:16	159:20	543:2	202:19
			544:17	205:6

207:19	367:19	222:2	376:16	130:5
254:18	432:14	506:16	378:20	131:10
264:11	470:23	APAP 9:18,	635:1	228:4
277:9	479:22	20 93:24	applied	282:24
278:6	483:19	A-PED	164:17	285:13
303:21	577:7, 24	16:21 17:8	180:12	323:15
304:12	590:14	Apologies	489:2	324:10
322:14	629:10	138:3	apply 488:9,	403:11
325:14	631:1, 3	apologize	14, 17, 23	AQ 547:20,
331:1, 19	634:17	69:5 74:15	610:23	22 548:3, 8
332:16	answering	85:8 116:1	636:19	architecture
334:17	190:15	149:21	Applying	499:14
343:20	331:15	150:20	164:19	area 252:3
348:13	559:23	apparent	165:6	253:20
352:11	answers	159:14	appointed	254:10, 14
364:21	122:4	171:1	633:19	313:22
365:4, 10	279:14	224:23	634:2	314:2, 6
381:16	313:6 639:8	appear	appreciate	376:23
398:1	answer's	100:24	151:10	377:3
414:14	187:1	200:7	575:2	379:10
419:10	Anthem	230:15	approach	408:19
421:14	566:14	235:12	501:1	418:14
433:6	ANTIDEPR	485:5	542:21	480:16
495:23	ESSANT	APPEARAN	543:19	492:3
520:5	18:11	CES 2:1	633:9, 11, 14,	527:2
566:6	358:15	3:1 4:1	19 634:3	537:22
578:2	602:13	5:1 6:1	approached	598:7
582:10	antidepressa	7:1 8:1	614:3	areas
583:19	nts 422:21	appeared	631:10	298:23
585:3	antipyretic	485:9	633:9	424:13, 14
588:3	45:7 509:22	appears	APPROACH	arena
589:14	Antonio 2:9	224:14	ES 18:15	331:18
590:5, 17	97:12	353:23	appropriate	arguing
591:5	anxiety	applicability	57:5 256:7	632:24
614:16	369:7	159:22	329:18	argument
answered	anybody	application	348:13	203:10
62:10	71:18	181:15, 18	637:6	222:3
84:23 86:6	195:15	186:5	approximatel	argumentativ
166:16	407:19	374:14	y 181:19	e 212:13
167:5, 10	anymore	378:15	400:17	404:13
200:18	60:1 216:5	546:23	635:19	argumentive
303:23	Anyway	applications	APRIL	53:16
304:11	42:2 66:17	374:19	11:11	61:15
354:18	195:16	375:12	20:14	84:20

146:8	243:6, 12	161:3	203:13, 16	aside
214:17	288:5	238:24	204:13	224:19
239:3	353:10	613:22	234:1	414:6
304:11	355:11	ascertainmen	282:4	asked 60:13
346:1	358:14	t 136:24	344:19	62:10 63:8,
410:2	379:17	138:8, 17	345:7	12 84:16
447:24	380:3	139:4	368:14	86:6
622:2 623:4	382:1	140:9	385:22, 24	117:13
arguments	404:23	159:19	400:20	118:15
224:19	417:4	325:10, 15	416:17, 20	154:24
Arnold	446:11	ASD 22:22	418:8	162:12, 18
484:18	456:5	23:21 28:7	420:17	166:16
Arora	472:14	44:10	421:4	186:16, 18,
380:22, 23	524:17	45:10, 17	428:13	23 200:18
382:5, 12, 22	527:7, 11	46:16, 18	456:13, 23	253:1
383:5, 9	531:11	49:18 50:4	459:4	313:4, 5
390:14	591:2	108:16	465:23	354:17
391:11, 17	597:8	111:2	470:6	367:18
ARPS 5:9	618:16	127:4	476:16, 24	390:12
592:15	articles	129:9, 13	515:21	391:6
array	53:3	132:11	527:1	432:14
533:19	100:14, 18	133:3, 19	528:3	445:18
arrays	154:13	134:20, 22	536:19	451:13
292:9	157:23	135:7, 23	600:14	462:14
article	188:10	136:20	604:5	476:14
43:23	382:21	141:5	609:11	483:19
102:5, 13	484:4	147:4	610:11	508:16
103:12	590:22	148:2	612:19, 21	518:23
109:19	595:16	150:5	ASD.PDF	570:8
110:9	596:8	151:16	28:16	577:6
118:14	613:12	156:12	ASD-ADHD	579:15
128:24	615:20	157:16	1:3 34:14	584:4, 6, 9
147:8	artifact	165:15	ASD-risk	589:10, 11
148:24	224:7	168:22	420:12	594:7
155:19	229:4 240:8	170:16, 21	ASDs 110:4	596:12
166:5	artifacts	171:8	ASD-specific	597:11
177:23	159:16	179:11	201:15	599:5, 10
178:12	artifactual	182:12	Ashby 2:8	601:3
179:20	110:24	185:15	ASHLEY	615:18
186:13, 22	113:13, 14,	186:8	4:3 633:11	616:24
198:17	21 116:8	188:3, 4	ashley.barrie	629:5, 9
199:17	119:23	194:24	re@kellerpos	630:5, 24
240:19, 22	120:10, 17	196:17	tman.com	631:9
241:18	133:21	197:15	4:10	634:16

asking 78:1 88:19 109:4 117:20 120:14 133:13 153:23 154:3, 4, 18 209:1 247:12 271:5 304:8 324:7 397:23 403:15 462:17 466:24 467:5 476:21 527:18, 19 529:15 554:23 579:12 588:9 593:22 601:12 613:24	assistant 81:9 assisted 353:18 associate 52:18 ASSOCIATE D 19:7 30:13 31:13 45:10 73:12 77:7 101:13 104:5, 21 203:15 285:7 294:12 343:14 356:24 367:6 373:1 393:13 394:12 397:17 426:19 427:20 428:12 452:24 454:9 465:13, 23 466:6 473:4 477:11 482:16, 22 511:22 512:19 514:4 521:18 522:21 523:10 525:12 535:5, 16 543:12 609:12	ASSOCIATE S 30:8 565:3 association 290:12 310:24 311:5 358:14 412:7 431:4, 15 465:2 466:8, 10 470:5 471:9 473:13 474:1, 3, 10, 14, 16, 18 484:6 536:3 594:23 595:17 598:7 600:16, 21 603:10 605:6, 10 606:1 associations 360:11 435:12 467:16, 24 506:4 602:11 603:13, 17 assume 83:15 152:4 161:9 196:2 245:19 410:14 456:14 513:1 615:9	assumed 160:14 461:18 Assumes 59:13 64:22 68:8 208:6 299:2 303:11 338:18 340:12 Assuming 329:22, 24 455:15 599:2 629:5 assumptions 161:4 Atlanta 143:16 Attached 36:20 637:12 639:11 attempt 578:9 attempting 386:21 578:13 attention 82:20 354:4 369:7 440:6, 14 441:10 548:1 attenuate 337:2 537:2 attest 442:19 444:11 attorney 58:21 576:15	580:12 637:16 attorneys 60:13, 17 63:7, 11 485:10 570:9 576:17 580:14 attract 494:3 497:22 attributable 168:24 240:8 370:21 attribute 139:3 167:22 attributed 172:6 326:21 atypical 381:4 audience 406:3, 10, 17 audiogenic 301:15 August 352:5 402:24 472:4 505:6 513:3 518:22 Australia 173:1 176:9 525:7 author 40:2 45:2 46:20 50:6, 14 52:19, 23 61:17 69:2, 6, 13 75:3
--	---	---	---	--

93:18	14, 15 16:8,	17 144:7	242:11	338:24
187:17	9, 14, 17	161:8, 24	244:2, 10, 19	339:1, 12
193:18	17:12	164:14, 16,	246:14, 19	340:21
259:18	20:11 22:9	22, 24 165:8	248:2, 10, 18	341:20
268:7	23:8, 10, 16	168:5, 6, 12	249:22	342:5
289:24	25:17 26:8,	169:17	250:5, 21	343:11
455:17	12 27:17	170:2	254:13	344:11
460:13, 15,	30:14	172:5	256:12, 16	347:3, 10, 16
21, 22, 23, 24	31:21	174:7, 9	258:6	348:5
461:4, 5, 8,	32:10 41:2	175:12	259:16	349:9, 16
11, 21, 22	42:3, 18	178:14	260:19	350:17, 22
462:3, 6, 9,	48:7, 10	181:16, 20	261:14, 20	351:1, 3, 6,
10 516:1, 3	51:10 52:6	182:2	264:6, 8	11, 14, 19
524:6	56:22	183:18	266:8, 22	352:10
525:17	57:15 63:5,	187:13, 16	268:4	353:8, 22
authored	17 69:22	192:16	270:24	356:8
55:2	70:1 72:1	194:10, 23	271:2	359:20
authorities	77:8, 14	198:2	272:13, 21	360:9
586:6	78:16	199:9	273:8, 10	361:4, 23
589:4	83:10, 11	200:6	274:1, 8	362:10, 16,
590:4, 11	85:14	202:23	277:5, 7	24 365:20
authority	103:22	205:21	280:2, 4, 20	366:2, 18
585:22	104:5, 21	206:3	282:12	367:5, 16
authors	105:23	209:17	283:4, 13, 22	368:1, 10, 20,
52:23	106:12	210:13	284:6, 11	21 369:5, 11
56:18 78:1	108:12, 24	214:9	285:9, 16	370:20
81:12	109:21	216:13	287:3, 15	371:2, 22
94:10	110:3	218:14	288:1, 15	372:2, 24
151:11	111:11	219:16, 18	289:11	373:2
160:21	115:9	220:12	290:2, 13, 23	375:6
175:5	117:7	221:11	293:9	377:14
268:11	119:17	223:17	294:6, 8, 14,	378:24
353:9	120:6	224:6, 24	20 295:11	379:8, 19
370:8	124:10, 13	225:6	299:6	380:7, 21
462:1	125:15	226:11	303:2	381:6
604:21	126:12, 24	227:21	318:5	383:13
606:10	128:9, 13	228:15, 22	321:16	386:23
AUTISM	130:6	230:16	323:5	387:15
10:15, 16, 20,	131:11	231:5, 8	326:10, 23	388:10
21 11:9, 20	133:8	232:20	329:6	390:16
12:14, 18	134:19	234:4	333:2	391:22
13:9, 12, 14,	138:10	236:9	334:3	392:17
20 14:11, 15,	139:21, 22,	238:2	335:22	393:2, 14, 18
16, 20 15:9,	24 140:4, 9,	241:13	336:7	396:22

397:1, 7, 14	475:4, 20, 22	594:20, 24	381:4	231:19
398:2, 15, 16	477:12, 14,	595:5, 18	547:24	233:11
401:1, 2, 11,	23 479:15,	599:16	available	251:19
15 402:4, 6,	19 480:24	600:9	40:22	313:24
7 403:11	481:1, 6	601:1	291:6	391:15, 24
405:2	482:17, 23	602:19, 20	510:16	404:19, 22
408:2	484:8	603:12	Avchen	405:22
409:22	486:14	605:3, 20	142:15, 20	454:13
413:7, 17	487:11, 14,	606:11, 24	143:2, 15, 23	484:23
414:1, 3	23 492:15	607:13, 19	144:11	509:24
415:6	494:24	609:5, 17, 23	145:6, 7	524:5
417:1	501:11, 16,	610:1, 7	146:21	551:7, 17
420:7	18 502:4	611:13	147:2, 8	552:2
422:12, 17	503:7	612:4, 21	153:7, 12	560:7, 17
423:16	504:3, 13	614:13, 22	155:23	601:2 616:5
424:19, 22	505:8, 19	617:10, 13	Avenue	awareness
425:3, 12, 16	506:6	618:20, 22	1:14 3:9	170:22
426:4, 10, 16,	507:22	619:20	4:16 5:5,	242:12
20 427:5, 8,	509:5, 11	621:7, 10	18 6:4, 10	
12, 21	511:14, 23	623:10	7:21 34:12	< B >
428:10, 15	512:6, 13, 22	626:1, 13, 19,	average	babies
429:21, 23	516:12	24 627:20	210:16	451:21
430:11, 20	517:20	634:14, 20	229:5	baby 48:11,
431:2, 14, 20	519:19, 22,	635:7	Avi 370:11	12 61:11
432:12, 19,	24 522:22	AUTISM.PD	461:13, 19	329:3
23 435:14	523:10	F 14:8	463:23	413:6, 21, 23
439:2, 9	524:7, 14	20:18 21:14	464:3, 8, 14	454:16
442:6, 17, 22	525:13, 23	AUTISM_C	571:1, 7, 18	576:20
443:7, 20	526:8, 14	DC.PDF	Aviv 489:20	579:10
444:6, 15	527:14	23:21	Avoid	Baccarelli
446:13	528:24	AUTISM_T	89:17 90:18	455:12, 13
452:4, 24	534:4, 16	HE 20:8	awaits	back 41:8
454:9, 14	535:6, 16	AUTISM-	605:10	72:15
455:17	536:6, 11, 13	FOMBONN	AWARDED	75:19 76:6
457:4, 10	538:8, 12, 13	E-2018-	26:15 389:4	101:2
458:3, 20	539:5	JOURNAL	aware 54:1,	121:11
465:14	542:23	20:21	3 55:22	122:23
467:18	546:22	AUTISM-	62:1, 15	123:5
468:4, 7	547:20, 21	KOLEVZON	84:3 99:8	134:12, 14
469:13	548:14, 21,	-2017 18:16	106:3	137:7, 14
470:14, 18	22 549:3, 19,	autistic	161:16	138:20
471:16, 20	21, 23 551:1	224:21	162:10, 21	141:1
473:5, 15	567:9	242:15	165:19	146:5
474:2, 6, 19	578:16		173:12	152:1

153:21	583:6	180:6	605:24	24 491:19
156:3	593:4, 10	200:6	627:17	567:14
164:1, 7, 9	602:18	214:6	BASKIN	begins
184:10	612:16	230:13	11:7, 14	415:7
205:13, 19	back-and-	276:6	223:16	416:17
207:6, 8	forth 578:9	286:23	227:20	419:16
217:9	back-	299:20	bat 246:5, 8	behalf 580:7
218:8	calculate	408:2, 5	306:1	behave
237:2	574:10	433:9	Bates 569:1,	256:2
270:14	backed	438:10	3 570:4	behavior
272:20	578:11	463:14	572:4, 14	139:20
273:16, 22	579:9	471:17	574:11, 17	185:20
276:21	background	480:22	Bates'd	309:16
287:13	530:5	492:13	572:11	BEHAVIOR
297:7, 12	backing	526:18	bathroom	AL 12:11
318:13	576:18, 22	560:13	217:22	138:9
323:7, 12	backwards	570:20	BAUER	behaviors
350:9	574:22	594:18	31:7 69:9,	104:4, 19
355:10	bacterial	609:17, 18	11 71:12	180:6
362:15	423:3	610:19	93:18	Behrang
371:7	469:23	615:11, 14,	571:2, 10	370:8, 10
387:8	bad 149:20	15 618:24	575:10	believe 41:6
398:6	430:22	620:5	577:17	45:20
411:3	434:18	baseline	BDNF	52:15 60:2
422:11	Baio 190:7	287:22	537:10, 19	69:8 97:7
424:23	191:18	basic 301:1	538:1	158:12
434:12	193:18	418:23	beard	358:1
441:20	ballpark	Basically	541:13, 16	388:7
445:4	564:21	128:17	BEASLEY	409:23
453:21	bar 374:12	142:18	2:12	410:11
461:11	barely	240:1	beating 62:6	445:1
463:1	393:16, 24	291:22	Beaumont	491:7
468:8	BARNES	301:13	47:13	533:21
508:1, 24	6:9, 16	413:14	328:13	565:21
523:19	BARRIERE	437:11	becoming	572:22
525:8	4:3	basis 90:12,	232:19	576:14
527:7, 10	Barton	22 92:5	before-the-	600:19
541:12	173:23	94:5 99:4	time-of-	believed
542:11	174:3, 14	197:5	birth 275:16	421:17
545:1	base 302:19	507:9	began	594:14
563:9	based 66:11	541:8	300:11	614:12
571:22	146:11	546:10, 12	beginning	believes
574:20	159:24	586:18	1:14 93:23	45:14
579:23	179:10, 15	590:21, 22	96:7 292:3,	

bell 105:12, 20 301:14 511:12 benefits 599:3 Bennett 187:6, 18 benzodiazapi ne 314:10, 23 Bergink 98:6 621:3, 6 Berman 233:15, 23 234:9, 13 235:8 236:7 Best 1:13 36:5 79:3 81:21 544:14 574:1 624:2, 18, 19 beta 314:9, 21 better 140:4, 6 159:18 292:1, 8 309:7 320:18 354:8 365:6 394:11 397:15 459:2 543:6 612:20 bias 337:1, 15 338:7, 16 407:2 biased 445:24	biases 605:8 616:5 Big 7:17 148:20 221:2 396:12 bigger 437:4 bill 561:11 571:24 624:22 billed 574:3 580:7 581:12, 14, 16 624:24 BILLING 26:22 58:12 60:7 572:15 580:21 bills 623:22 Bio 563:18 biologic 516:21 biological 44:9 412:16 422:8, 15 423:20 424:4, 7, 11, 14, 17, 21 425:1 536:10 540:18 543:11 604:4, 11 BIOLOGY 20:7 543:6 544:15 biomarker 380:10 384:6, 8 386:15 398:9, 18 399:8	biomarkers 383:22 384:15 385:3 398:7 399:2, 4, 16, 18 400:1, 5, 11, 14, 20 401:18 402:2 biopharmace utical 556:10, 12 Biosciences 562:20 birth 160:6, 10 275:10, 12, 13 360:15 362:11, 12 423:12, 13 452:1, 21 454:6, 17 456:15, 24 457:3, 22 458:7, 8, 16 499:12 511:1 603:11 births 117:10, 11 bit 43:7 58:1 61:14 102:8 108:22 437:5 449:14 450:14 550:18 607:10 616:16 Bits 455:7 613:11	BlackRock 558:5 blah 407:10 blame 192:12 602:9, 19 603:4 625:11 627:17 blaming 625:9 blank 610:9 BLAXILL 11:14 223:6, 16 224:14, 15 225:23 226:23 227:17, 19 228:12 229:2 230:7 232:15 584:22 B-L-A-X-I- L-L 223:6 Blaxill's 227:9 blog 361:16, 22 362:4 blogging 362:5 BLOG-ON 20:7 blood 77:10 398:22 399:6, 10 467:20, 21 472:8, 12 543:4 Bloomberg 78:8 blow 72:23 73:2 74:12	80:8 103:6, 11 108:9 147:20 149:14 173:23 392:6 433:21 493:15 519:13 blue 511:9 579:11 585:20 BMI 465:12, 13, 22 466:13 467:10 board 561:2 562:3 boards 560:22 Boccuto 306:5, 6 BOCCUTO- PHENOTYP E 28:18 bodies 494:9 498:12 body 49:12 80:16 81:6 224:19 373:23 375:23 382:4 384:11 393:11 404:23 423:1 475:18 506:3 boned 256:4 BONESTEE L 7:14
--	--	--	---	---

BOOK	536:8, 16	290:7	514:19, 24	briefly
27:21	601:5, 14, 17	322:11	518:8	109:11
40:17 41:5,	609:7 623:1	345:5	533:10, 17	597:7
10 42:2, 8, 9,	books 40:12	362:20	535:20	Brigham
17 43:19	41:4 128:20	376:9	536:20	88:14 89:5
45:5 46:24	Boolean	418:8	537:20	bring
48:15, 23	84:6	419:13	538:2	309:19
49:5 50:18	Boots 6:14	420:23	541:3	575:3
53:10, 12	bored	484:3	543:3, 8	bringing
55:24 58:2	278:11	547:18	Brain-	273:16
61:17 63:2	BORN	549:17	derived	547:11
64:18	27:18	568:11	537:13, 16	Bristol 43:4
83:13	143:16	574:19	brains	broad
101:10	221:12	Boulder	437:4	357:5
123:1, 13	228:17	566:2	498:11	382:10
274:10, 18	265:24	bow 60:20	brain's	466:18
288:23	455:18	575:23	517:15	481:13, 15
289:21, 24	Bornehag	579:23	break	491:22
356:10	619:8, 15	580:4	121:13, 17,	493:10
359:18	borrow	box 38:12	22 131:22	494:18, 20
365:18, 22	207:5	46:10 96:6	134:1, 9	495:6, 7, 9,
366:7	borrowed	297:10	151:23	18, 22 496:2,
367:11	207:3	344:15	216:4, 8	3, 7, 9, 16
408:17	boss 124:2,	boy 327:1	217:22	498:5
422:11	4 397:10	329:10	218:5	500:11
423:7	BOSSO 6:3	511:8	255:2	521:14
424:8, 9, 11	Boston	Bradford	333:19	528:6, 10
442:2	324:24	411:24	339:10	544:19
444:18, 19	bothered	413:5	349:2, 24	broadened
445:6	212:8, 10	414:8, 12, 16	411:1	166:8
452:3	304:9	brain 49:15	449:18	broadening
458:5, 17	bothers	81:4 295:7	504:9	169:18
460:8	67:12	311:9	508:16, 22	191:8
465:5	bottom	315:20	593:2	broader
469:22	39:14	342:1	breakages	368:19
481:20, 24	40:17 68:2	415:15	252:7	broadly
484:1, 11, 21	92:8	418:24	BREAKTHR	136:1
486:7, 21	102:17	420:13	OUGH	339:17
487:7	159:2	421:8, 16	23:17	458:14
501:17	171:6	422:2, 4	379:20	511:19
502:1	233:22	467:4	380:5	548:23
512:2	240:23	477:18	Brennan	549:1
515:18	278:3	494:8	174:4	565:11
516:3	279:14	499:14		broke 246:7

broken	96:2, 17	162:16	216:2, 9	288:4, 9
245:14, 23	99:5 100:7	163:1, 13, 18,	217:21	289:1
246:9	101:14, 20,	24 164:4	218:1	295:22
248:16	24 102:6, 19,	166:15	219:5	297:2, 8, 13,
295:18	23 103:5, 8	167:4, 9	222:13, 19	16 298:9
305:4, 5, 7	104:23	172:7	224:1	299:1, 13, 23
308:3, 5	106:1	173:6	225:12, 24	303:10, 23
318:8	107:6	175:20	226:20	304:10, 22
brother	110:7, 15	176:5, 14, 20	227:4	305:8
265:5	111:16	177:6, 16, 24	229:9	308:4, 15
brothers	112:2, 8, 20,	178:9, 21	230:22	312:14
267:1	23 113:2	179:18	231:17, 23	313:7
brought	114:17	181:6	233:9	314:11, 24
203:2	115:4, 11, 16,	183:4	234:15, 22	318:9
460:12	21 116:11	184:4, 12, 21	235:21	320:3
BROWN	117:12, 23	186:11, 16,	236:15	322:5
5:9 7:14	118:12	20 187:19	237:16, 19	323:22
9:8 38:8,	119:11	188:6, 16, 20	238:14	324:12
14, 22 39:10	120:1	189:1, 7, 12,	239:2, 18	325:7
41:19 43:6,	121:16, 23	14, 18	241:1, 16	326:12
10, 12, 14	122:3	190:12	245:15	327:3, 17
46:7 47:7	124:23	191:15, 21	246:1, 10, 16,	328:4, 21
48:18	125:8, 18	192:9	24 247:4, 11,	329:12
51:21 52:1	126:1, 14	193:11	21 248:5, 20	330:9, 22
53:14 55:6	128:2, 6	194:6, 19	249:7	331:13
56:24 57:9,	130:7, 16	195:9	250:1, 14, 24	333:5, 18
11 59:9, 13	131:3, 8, 19,	196:3, 11, 21	252:13, 19	334:6, 12, 19
60:10	23 132:13,	197:18	253:7, 17	335:1, 8, 16
61:19 62:9	20 139:11,	198:11, 19	254:6, 19	336:3, 8
64:7, 21	15 144:2	199:5, 11, 20	255:6, 23	337:6, 16, 22
67:21 68:7	145:21	200:12, 17	256:6, 13	338:8, 17
69:3 70:20	146:6	201:21	259:3, 6	339:14
71:2 73:4,	148:6, 9, 14,	202:17	261:22	340:4, 11, 24
24 74:16	23 149:5, 15,	204:1, 16, 23	262:4	343:19
76:7 78:18	22 150:8, 17,	205:3	263:7, 12	344:13, 15,
79:23	21 151:4, 22	206:16, 24	267:3, 16	24 345:24
83:22 84:9,	152:12, 17	207:9, 15	270:20	346:10
17 85:4	153:24	208:5	271:17	347:11, 20
86:5 87:4,	154:6, 14, 20,	209:8	272:4	348:11
12 88:3, 16	23 156:18	211:3	273:8	349:1
89:19 90:1	157:1, 6	212:9, 12	274:22	352:13
91:1 92:2	158:1, 16, 20	213:3, 14	276:12, 20	354:17
93:7, 11, 15	159:5	214:16	277:1, 11	357:2
95:8, 17	161:18	215:2, 14	282:5	361:5

363:2, 12	449:7	520:15	616:13	BUTLER
364:1, 23	450:21	522:9	618:2, 8	5:16 58:22
365:8	451:9	524:9	620:9, 21	59:21
366:4, 14	452:11	527:4	622:1, 12	84:15
367:9, 18	454:18	528:4	623:3	572:20, 21
373:20	456:3	531:15	625:3, 17	573:21
375:16, 21	459:7	532:8	626:3, 8, 14	576:9
378:17	461:1	533:11	627:1, 21	577:3
379:22	463:10	547:5	628:8, 17, 22	579:12, 21
381:15	466:15	550:21	629:9	580:7
383:2, 15	468:14	551:21	630:5, 24	583:10
384:13, 20	469:14	552:1, 22	632:2, 9, 21	584:1
385:13	470:20	553:6	633:3, 20	622:22
386:2	474:11, 20	554:6, 16, 21	634:4, 16	623:21
388:12	475:6	556:21	635:11	buttons
389:8	476:7, 18	557:5, 9, 15,	buckets	439:19
390:6, 18	477:2	20, 24	283:5	Buxbaum
392:9	478:7, 18, 23	558:10, 21	Bud 453:24	397:2, 9
394:16, 23	479:12	559:7, 19	buddies	436:22
395:5, 17, 23	481:12, 23	560:1, 11	124:18	BUXBAUM.
396:4, 9	482:24	565:4, 8	buddy 396:7	PDF 14:12
399:22	483:18	566:4	building	buy 74:7
403:16	484:24	568:9	555:17	171:24
404:11	485:21	569:16	built 351:17	buyer
405:5, 11, 15	490:2	572:2, 7, 10	499:13	556:10
406:12	491:2	573:12	bullet	
407:11, 21	494:17	574:13	214:12, 20	< C >
408:22	495:9, 17	576:10	bullish	CAIN 7:8
409:15	496:19	577:6	347:8	calculate
410:1, 18	497:6, 18	583:14	bummed	172:3
415:13	498:2, 15	584:14, 24	464:13	calculated
427:15	499:3, 17	585:23	bump	142:20
428:20	500:8	586:8, 23	201:19, 20	193:18
431:21	502:24	587:17, 21	bunch	calculating
432:13	504:6	588:18	259:1	136:23
433:5, 21	505:21	589:6, 17, 21	307:8	142:14
434:6, 14	506:1, 17, 24	590:12	424:12	143:22
435:2	508:18	591:12, 17	613:12	198:1
436:15	510:11, 18	592:8, 16, 20	BURKE	calculation
441:15	511:17	593:9	7:20	160:7
445:21	515:3	596:18	business	194:3, 11
446:3, 14, 23	516:14, 24	608:4	592:4, 14	198:10, 18
447:17, 22	517:22	612:14	butchered	200:15
448:6	519:5, 13	614:8	525:1	237:23

calculations	107:13	candidate	CARUSO	334:1, 4
199:9 224:4	138:9	290:12	5:10	335:4, 13, 23
calendar	198:4	343:11	CASE 1:4	336:11, 14,
160:3	203:10	cannabinoid	35:18 38:7	20, 22
California	211:21	517:10	39:2 40:7	351:24
7:4, 16	249:11, 14	518:7	47:20 48:4,	363:10, 24
10:16, 20	258:4	Canon 74:9	9 53:22	365:15
114:15, 20	272:19	capable	58:6, 9, 17	367:4
161:8	292:1, 20	496:5, 15	59:22 60:7,	369:5
206:4	293:4	498:23	14, 15, 23	403:24
216:14	301:15	capital	61:2, 5, 7, 14	404:5
218:12	302:15	374:15	64:20 68:6	407:20
220:13	309:5	558:6	83:9, 21	409:11
223:18	348:12	capture	84:16 86:3	411:13
224:11, 24	374:18	380:15	107:5, 13	413:9
225:3, 4	380:12	cardiovascul	125:4	414:9, 11
227:22	411:23	ar 398:20	127:11	416:12
234:1	415:24	cards	128:14	429:5
236:11	437:10	406:22	153:9	447:11
241:9, 13	455:9	care 327:7	155:14	453:7
242:9	542:6	career 408:8	159:17	454:3
call 70:12	550:2	careful	210:3	462:13
95:5	623:22	163:5	226:17	471:23
248:18	calling	carefully	233:20	484:20
256:11	410:14	203:18	234:8	494:24
295:18	Calls 248:6	205:12	245:20	496:8
374:11, 12	250:2	224:11	249:22	505:18
378:16, 20	320:4	232:13	266:1	508:1
525:16	337:23	462:23	272:13	511:5, 6
562:3	407:22	465:19	273:17, 24	513:13
569:6	476:8	637:4	281:16	518:22
571:15, 17,	478:8, 19	Carl-Gustaf	282:4	538:5
18 575:2, 19	479:13	619:8, 14	293:12	545:21
577:19	500:24	carried	301:12	549:9
579:11	571:12	160:22	306:1, 19	565:10, 13
581:4, 5, 9,	576:11	319:21	309:8	566:2, 11, 13,
11 583:2, 5,	CAMPBELL	carriers	317:20	15, 18 567:3,
7, 9 584:1	3:8	298:6, 14	318:23	4, 12 571:11
585:6	cancer	carries	327:9	573:2
592:10	540:8	423:7	328:2, 15, 24	575:24
called 51:6	628:21	cars 449:18	329:18	576:16, 20
54:15	629:3, 7	Cartolano	330:8	577:5
58:16, 23		192:4	332:24	578:16, 19,
84:15			333:10	20 579:11,

13 580:9	category	271:2	295:4	24 468:12
595:10	45:8 209:3	278:5	305:7	470:17
602:12	270:18	279:2	306:2	480:6
609:15	271:9	280:2	311:10, 12	515:21
617:9	CATHERIN	282:12	321:16	598:11
620:12	E 2:19	294:6	335:22	601:1
634:15	138:18, 23	295:11	499:23	602:8
CASES 1:6	catherine.he	307:16	607:13	605:3
111:11	cox@lanierla	311:21	causes	609:23, 24
204:5, 6, 10	wfirm.com	312:8	71:24	617:10
208:12, 23	2:23	322:13	111:3, 7	626:12
233:14	Catskills	323:7	135:7	caution
242:20	36:12, 17	329:5	245:3, 6	94:11
243:3	causal	333:2	249:5	330:23
265:5	248:10	334:3	252:6	331:14
266:4	275:6, 18, 24	336:7	295:21	335:17
303:2	285:8	338:15	296:20	602:7 625:9
318:19	353:15	368:9, 23	313:20, 21	cautioned
322:4	457:19	385:9, 21	326:19	93:23
326:23	512:18	386:9	348:5	cautioning
327:20	518:3	393:18	351:6, 14, 19	80:13
335:20	529:11	399:19	352:10	cautiously
368:7	536:19	400:2	368:21	428:2
400:6	595:1	402:4	453:3	CDC
431:14	598:7	416:20	469:12	127:17
491:24	603:12, 20	471:16, 20	477:14	129:11, 15
492:1	615:2	474:6, 8, 14	479:19	133:10
493:11, 12	628:20	478:16	481:1	144:10, 14
494:22	causation	480:9	483:3, 4	175:5
496:10	347:6	493:6	504:14	180:10, 12
498:4	363:19	534:4	534:19	195:20
499:6, 18	367:2	597:18	542:23	196:9
511:1	411:24	600:9	594:20	197:14, 24
512:13, 23	causative	606:11	595:5	198:4, 10, 17
519:22	48:7 413:7	608:24	600:7	199:9, 18
579:5, 7	CAUSE	614:13, 22	617:12	200:15
609:1 611:2	13:20	628:21	621:9	457:8
CAST	244:10	caused	626:19	458:1, 2
548:22	245:23	48:12	629:7	611:19
casualty	246:8, 19	201:19	causing	612:3
470:10	250:5	254:3	45:17	CDC-
categorically	255:3, 15	256:10	61:11	monitoring
345:7	256:24	257:8	269:15	179:6
	269:20	272:1, 3	272:22, 23,	

CDC's 197:20	534:10, 11, 12 551:2	certainty 84:1	182:11, 23 202:8	543:12, 17 545:12
CEHC 534:14	Centers 191:19 456:18	CERTIFICA TE 636:2	222:4, 7 226:7	611:2 637:11 639:10
CELESTIAL 25:20, 23 61:4, 7	cerebral 418:11 421:7	certification 636:18	236:20 242:12	CHANGING 10:19 111:21 170:22 206:9 207:12, 23 208:4, 9 209:2 210:23 220:12 223:17 227:21 279:12 340:19 382:7 581:21 582:1 583:4, 11 584:2, 7
CELL 22:9 309:10 417:1 437:18 494:1 497:14 526:5 541:6 543:3, 8	certain 85:1 114:14 144:15 209:14 283:12 291:20 370:19 378:22 380:17 394:11 397:16 421:23 482:14 493:4 504:2 528:14 571:16 600:12 611:5 616:10	CERTIFY 636:5 639:5	243:23 246:15 248:3, 15 249:5 254:2, 4 255:3 256:11 264:22 325:10 356:2, 4, 6 432:5 507:16 638:4	CHAPTER 13:13 14:10, 15 42:9, 10, 11, 13, 17, 23 43:16, 19, 24 44:7, 15, 17, 21, 23 45:2, 4, 5, 14, 22, 24 46:4, 21, 24 48:15, 23 49:5 50:7, 8, 18 51:5, 14 52:5, 12, 16, 22 53:10, 12, 20 55:21 57:6 61:17 62:12 63:2, 17 64:19
cells 103:19, 23 309:4, 18 353:16 418:21 480:7, 9 493:7 543:4	certains 85:1 114:14 144:15 209:14 283:12 291:20 370:19 378:22 380:17 394:11 397:16 421:23 482:14 493:4 504:2 528:14 571:16 600:12 611:5 616:10	certifying 636:22	changed 169:16 202:14, 23 214:7 232:6 238:5 250:22 516:8	
CELLULAR 15:8 103:20 268:3 377:22 438:10 481:8	chamber 571:16 600:12 611:5 616:10	chain 574:9	changes 133:6 137:5 170:20, 24 211:15 221:17 224:8 236:8 242:21 257:4, 19 283:20 355:23 493:6 499:23 500:12 507:18 532:19	
CENTER 13:18 97:12 127:2 129:11 347:17 396:22 397:1, 7, 14 425:16 428:10, 15 490:15 505:8	chance 41:20 152:18 447:7 604:20	CHALLENG E 16:8 183:18		
	challenges 416:19	challenge 183:18		
	chamber 439:23	chance 41:20 152:18 447:7 604:20		
	chance 41:20 152:18 447:7 604:20	chances 380:21		
	change 111:12 118:10 159:17 161:4 162:6 165:7 167:17 168:19 170:7 172:4 174:17	change 111:12 118:10 159:17 161:4 162:6 165:7 167:17 168:19 170:7 172:4 174:17		

65:3, 6, 9, 14	606:14	CHEMICAL	117:7	384:7
68:16	609:8 623:1	S 13:20	129:12	602:9, 20
83:13	chapters	279:11	131:13	choice
101:10	40:12 41:5	380:14	143:16	567:24
123:5, 13	55:13, 19, 24	498:22	153:8, 19	625:15
169:10	123:1	534:3, 14, 20	155:13	choices
274:10, 18	characteristi	Chicago 4:9	160:5	428:3
289:24	c 528:14	CHILD	174:8	Cholesterol
356:11, 12	characteristi	20:22	175:11	399:13
359:20	cs 50:1	48:10	186:7	choose
365:18, 22	characterize	144:8	196:16	582:13
366:7	239:6	170:18	197:14	591:9
367:11	characterize	269:19	219:16, 17	chose
408:17	d 310:23	284:23	221:12	583:24
422:11	311:4, 19	320:1	228:17	589:9
423:7	CHARNEY	329:2	229:6	CHPT
424:8, 9, 12	18:18, 20	335:22	230:9	23:12
425:6	289:23	338:23	242:14	Christina
442:2	359:17	376:6, 15, 20	308:10	566:2
445:6	chart	377:10	315:17	
447:8	132:23	378:8	342:6	chromosomal
452:3, 9	136:14	384:10	354:13	291:14
458:5, 17	610:9, 12	427:5	394:14	292:24
460:8	check 95:24	443:20	397:19	chromosome
462:14, 15,	132:8	448:18	398:4	252:8, 9, 10
17, 21	195:11	449:23	426:14, 21	255:1
463:17, 18,	358:5	490:16, 18	427:13	302:22
24 465:5, 11	382:23	500:24	439:2, 16	316:8
469:22	585:20	504:4	511:14	317:16
481:21	586:21	525:12	521:20	chronic
484:1, 11, 22	587:4	567:7	612:4, 19	513:8
485:4, 20	Checklist	600:14	CHILDREN	Chung
486:1, 9, 18,	548:14	609:16	_WITH_AU	29:13, 15, 18
21 487:7	chemical	626:5	T.PDF 12:8	32:11
501:19	270:15	childbirth	CHILDREN'	131:10
502:1, 14	355:18	436:6, 7	S 13:18	262:22
505:18	382:3	childhood	180:7	263:9
515:18	384:9	77:15	534:11	264:4
516:1, 4, 9	451:5	279:1	child's	276:10, 13
536:9, 16	499:10	375:15	333:2	277:3, 14
601:6	500:22	499:12	334:3	278:3
602:4, 6	chemically	548:21, 22	336:7	282:18
603:7	492:7	CHILDREN	380:14	283:2
		20:12 83:3		285:12

321:22	176:23	379:19	252:16, 22	client
322:11	181:24	416:22	254:22	232:20
325:22	183:22	citing 80:15	255:9, 19	Clinibis
404:7	197:9	151:11	clastogenic	562:10
407:24	203:9	167:16	251:20, 22,	clinic 323:4
Chung's	212:2, 8	173:4	23, 24	CLINICAL
130:1	216:12	470:8	253:14	19:22
387:9	219:4	515:22	270:15	35:13
402:22	220:2, 21	City 3:10	C-L-A-S-T-	164:14
CI 470:8	221:22	CIVIL	O-G-E-N-I-	214:6
cigarette	230:1	27:13	C 252:1	248:18
628:21	234:9	54:14 55:9	clean	269:15, 20
629:2	258:14	claim 48:10	219:11	281:9
cigarettes	298:18, 21	337:19	220:4	282:16
450:16	458:17	567:6	506:22	286:2
circle 404:8	523:20	claims	clear 85:17	294:13
406:8	cited 143:4	224:10	90:21	300:21
circles	155:20	clarification	146:11, 14,	304:18
403:5	161:17	136:22	17 191:4, 6	307:1
404:21	162:11	180:4	222:6	309:20
405:21	169:4	307:19	237:11	310:6
406:18	182:5	clarify 52:4	239:20	392:15
409:21	193:5	95:20	242:17	397:8
circulating	197:11	163:4	244:8	401:19
480:5	204:22	171:16	335:23	425:16
circulation	213:10	248:24	366:24	440:23
472:16	220:1, 21	269:7	457:4	505:7, 12, 13
circumstance	222:1	410:8	485:3	542:3, 4
s 482:14	226:22	462:14	500:13	543:15
498:17	228:6	486:15	506:3, 9	608:1
citation	231:21	487:1	516:17	CLINICAL_
164:5	233:15	512:17	518:3	TRIALS_IN
169:6	235:7	577:18	521:7	_PMS
213:1	261:7, 9	588:15	533:9, 16	19:15, 18
584:12, 18	341:6	clarifying	535:22	clinically
citations	342:12	487:3	580:12	103:24
230:3	415:23	classic 455:8	623:7	244:21
cite 100:22	524:23	Classification	clearly	281:14, 18
143:5, 20	CITES	195:2	218:17	282:2
145:4, 23	23:16 43:4	classified	226:5	615:16
156:6	174:3	45:8	249:12	clinician
162:5	218:11	clastogen	322:23	144:7
163:21	260:4	251:16	click 185:7	182:21
164:12				

470:17	46:2 47:1	cohorts	221:9	185:7
476:23	48:15, 22	159:24	228:10	201:1
Clinician-	50:9, 20	160:6, 10	230:5	270:23
Administere	51:15, 18	550:7, 12	341:17	323:6
d 547:1	53:3 58:3	co-	345:5	406:19, 23
clinicians	63:4, 16	investigator	346:3	503:19
161:10, 13	64:18	438:24	492:24	557:14
clinics	357:20	co-leads	547:11, 19	616:4
144:20	370:6	631:21	combat	comfortable
Clinilabs	423:8	collaborate	555:16	105:9
562:13, 14	460:3	300:19	combination	255:13
clip 277:13	484:12	301:1	135:24	421:11
	co-authored	307:20	159:16	476:6, 11
CLIP_1.MP4	128:23	collaboration	320:17, 19	479:8
26:20	134:15	s 550:5	353:19	480:21
CLIP_1.MP	393:1	collaborator	368:3, 15	629:12
F 19:16	co-authoring	69:21	combine	coming
CLIP_5.MP	370:17		161:5	178:4, 18, 23
F 19:19	co-authors	collaborators	combined	531:13
close	445:3	425:23	219:19	621:21
176:22	code 291:19	colleagues	242:24	comment
237:18	coded 180:6	52:13 98:8,	281:11	81:24
243:1, 20	Co-editor	14 523:16	605:21	121:6
463:7	52:11	529:9	come	143:1
630:23	cognitive	collect 379:7	124:21	153:23
clown 71:8,	82:22	Colleen	146:1	154:4, 16, 19
18	COHEN	540:16	176:7	227:12, 15
CLUES	5:16 58:18,	college	177:14	229:12
25:16	19 59:5, 16,	488:3	243:20	232:2, 12
344:10	20 60:4	489:6, 8, 13,	278:6	252:23
CNVs	572:23	23	284:9	276:11
268:20	573:1, 6, 21		304:16	371:6
coached	577:3, 9	COLOMBIA	310:6	388:15
495:10	Coherence	29:10	322:14	397:21
496:17	412:19	color 203:23	328:3, 11	522:13
coaching	cohort 81:5	Colorado	334:23	commentary
188:24	83:2 99:24	7:10 566:3	405:14	223:15, 20
496:21	118:24	Columbia	557:6	224:9
591:22	164:20	297:22	574:20	227:9, 10
co-author	165:13	324:24	591:16	commenting
42:11, 12, 17,	167:19	column	595:8	105:9
21, 24 43:20	326:2	110:23	597:15	comments
44:2, 8, 18,	456:14, 15	147:18	comes	142:23
23 45:5, 24	550:2	148:18	132:8	501:7 628:7

Commerce 2:15	529:10	120:5	comparing 181:14	component 409:21
commercial 556:1	548:13	143:9	COMPARIS ON 22:21	comport 60:8
commission 639:21	597:5	144:22	194:22	403:13, 18
commitment 71:23	common/mil d 285:16	146:3, 15	265:3	composition 248:3
committed 71:9	commonly 94:16	162:2	compelling 472:23, 24	Compound 211:4
383:11	143:24	182:20		311:23
387:13	144:5	198:22	compensated 562:4	compoundin g 504:20
committee 631:23, 24	161:24	213:9	complete 152:15	compounds 438:12
633:18	213:8, 24	214:6	184:24	comprehensi ve 570:13
634:2	214:5	226:4	589:11	588:3
committing 387:11	246:19	297:21	603:24	compromise 186:6
COMMON 30:20	295:10, 16	298:8	completely 235:22	concentric 403:5
86:19	361:12	361:14	completion 636:8	concept 165:14
251:3	444:12	457:19	complex 171:9	167:16
257:21, 24	452:24	479:18	343:7	257:18
258:3	454:8	486:12	344:20	267:2
259:17	457:17	611:23	345:8	301:23
261:13	467:17	613:5, 11	393:17, 23	422:8
262:14, 16	480:24	comorbidity 369:1, 11	compliance 203:7	450:9
269:14	482:22	370:20	complicated 262:1, 7	487:22
270:1	517:7	372:7, 23	302:10	494:15
280:5, 10, 14, 16, 23	611:22	393:1	complication 567:9	544:9
281:2, 11, 13, 17, 20, 23, 24	common- sense 448:15	comorbidity 369:2, 3, 6	complication s 360:16	conception 249:16
282:12	communicate d 409:9	compact 266:22	454:6	271:3, 8
286:1, 4, 9, 10, 15	communicati ng 406:9	companies 558:20	511:16, 21	303:19
287:2	communicati on 541:6	560:21	603:11	concepts 479:2
290:20	548:2	company 552:12	comply 189:19	conceptual 363:15
294:18	communicati ons 507:14, 20	555:24	591:7	435:24
326:15, 21	communities 203:23	comparator 265:17	complying 189:15, 16	conceptualiz ation 414:1
327:12	205:15	compare 106:9		
337:3	555:18	338:24		
369:5	COMMUNI TY 29:10	compared 179:14		
372:23	68:11	193:24		
519:18	94:17	426:21		

conceptualize	290:9	conduction	confounder	248:17
d 413:18	502:2	437:18	609:10	416:21
conceptually	526:3	Cone	confounders	518:4
501:3	595:9	240:20	442:13, 14	
concern	620:5, 7, 15	243:12	443:9, 22	consequences
334:20	621:22	confer	444:8	481:10
335:5	622:4	418:10	confounding	482:8
concerned	conclusions	CONFEREN	50:21	conservative
331:15	49:7, 9	CE 17:16,	339:7	337:4
504:17	81:17	19, 23 18:8	473:18	consider
concerning	124:14	401:11	506:12	70:1, 23
507:22	288:9	439:9 539:5	605:9 610:2	71:5 81:7
617:1	373:6	conferences	congenital	471:19
concerns	456:2, 12	529:8	359:3	540:15
68:21	526:18	confers	471:10, 20	585:21
78:13	597:3	470:13	Congress	586:7, 16
91:18	606:15	confidence	198:7	587:15
174:17	conclusive	179:13	conjunction	589:3
190:21	146:2 598:1	CONFIDEN	49:17	590:10
198:23	concordance	TIAL 1:8	connect	609:11
199:24	258:5	490:9	309:18	considerably
330:11	265:14	confidentialit	connection	50:23
334:10	272:8	y 330:13	595:14	
597:15	concordant	confirm	connections	consideration
conclude	366:21	514:10	309:10	147:23
230:13	condition	530:11, 13	543:8	considered
603:19	244:20	582:18	consciously	64:4 68:13
606:10	364:20	596:13	446:19	85:12, 18
617:12	369:3, 4	598:10	CONSENSU	97:23
621:9	472:8, 12	confirmed	S 31:7	135:10
concluded	544:14	420:3	68:10, 19, 23	146:13
174:6	602:9	confirms	69:7, 14	180:17, 19
239:15	conditions	456:23	93:6 95:3,	183:23
242:10	50:2	conflict	16 120:4	234:14, 21
372:22	248:18	60:22 61:3	143:8	235:1
473:22	377:18	578:21, 23	146:16	269:10
635:18	422:21, 24	579:1	226:5	270:7
concluding	466:1	conflicting	479:17	273:19
598:23	603:10	613:18	613:5, 10, 20	285:8
conclusion	609:18, 24	conflicts	620:18	306:19
186:3	conducted	616:2	621:13	315:12
197:6	230:8	confounded	622:9, 20	458:9
208:8	351:9 428:6	536:24	consequence	531:5
224:16			234:3	547:13

585:11	11 579:12,	311:7	contraction	contributors
586:12	15 598:21	324:15	182:2	360:17
589:3 590:9	consultant	345:21, 23	contractions	375:6 454:7
considering	461:20	354:22	436:5	Control
432:3	consulted	355:2	contrary	127:2
598:17	561:21	365:7	225:3	129:11
605:6	562:9, 18, 21	368:19	contrast	191:20
Consistency	563:1, 6, 11,	381:8	291:3	337:14
412:9	22	382:1	contribute	338:15, 21
414:22	consulting	434:9, 13	168:17, 20	339:5, 6
465:2	562:17	465:1	208:19	440:9
603:18	564:15	481:16	261:13	442:13
consistent	Consumer	502:12	287:2	456:19
144:19, 20	5:14, 21	519:1, 9	349:16	494:5
182:19, 20	534:15	520:3	383:13	498:8
200:2, 8	contacted	522:14	386:23	537:1
219:9	59:22	544:1	512:12, 21	636:21
248:10	contain	634:14, 21	534:16	controlled
323:20	381:4		contributed	504:18
403:24	containing	contextualize	82:14	controlling
404:4	522:20	343:23	133:7	442:12
408:7	523:9	continue	137:17	controls
440:19	Cont'd 3:1	40:15	179:7	314:16
441:4	4:1 5:1	121:24	191:7	336:24
443:10	6:1 7:1	189:21	221:15, 19	338:6
465:17	8:1 10:2	305:9	237:12	convenience
466:9	11:2 12:2	415:11	contributes	575:3
473:13	13:2 14:2	419:17	161:22	convenient
506:23	15:2 16:2	546:6	472:15	110:17
507:8	17:2 18:2	continued	contributing	conventional
526:6	19:2 20:2	168:6	199:1	356:24
536:10, 14	21:2 22:2	350:12	387:14	converge
598:2	23:2 24:2	611:24	contribution	418:10
599:9	25:2 26:2	continues	326:18	CONVERGE
604:16	27:2 28:2	127:1		NCE 15:7
consistently	29:2 30:2	211:24	contributions	268:2 421:6
50:2 67:16	31:2 32:2	225:4	306:23	convergent
405:1	content	275:2 538:5	307:10	526:7
473:3, 10	507:16	continuing	343:8	conversation
consult	contents	500:20	contributor	59:2, 17
94:1	462:21	611:12	283:13	330:16
447:20	context	continuous	452:22	572:19
561:19	151:9, 12, 14	439:18	482:21	573:18, 19,
564:2, 4, 6, 9,	190:18			20 577:12

578:14	7:12, 24	548:19	60:2 569:7,	counter
579:18	562:16	565:16	24 580:24	510:17
580:6	correct	576:23	cortex	country
583:16	39:1 45:21,	577:1	418:11	79:3 81:21
convincingly	22 58:7	578:17	421:7	88:14 89:9
609:4	100:2	582:2	cortical	97:2 98:1
Cool 305:19	107:4	594:5, 6, 11,	419:14, 18	168:13
463:21	116:24	12, 14, 15	420:2	210:12
coordinated	138:21	600:17	cost 547:15	County
149:16	139:2	601:15, 16,	Costales	565:15
copied	141:15, 19	20 611:17	359:10	couple
463:4 580:2	142:2, 7	614:7 639:7	Costco 6:21	142:23
copies	155:22	corrections	Cote 1:7	240:21
38:10	178:19	637:5, 7	counsel	374:21
151:24	200:5	639:10	34:18 43:6	424:3
152:5	257:3	correctly	73:24 87:4	489:15, 23
301:11	261:3	44:13 47:3	90:2 91:2	491:1
438:7	268:15	49:21 51:1	102:19	539:1
440:12	285:10	76:22	207:2	593:13
copy 37:3	291:15	77:19	276:15	601:19
39:1, 5	310:22	111:4, 5	375:18	607:8 628:9
74:4 107:4	313:18	136:17	490:18	course
121:12, 18	316:5	164:20	491:2	152:16
122:1	318:5	179:17	593:22	242:6
149:6, 20	319:8	181:21	599:10, 16	360:20
150:16, 19	321:19	224:13	601:11	403:23
181:8	332:16	225:7, 11, 15	602:4	440:22
184:16, 23	348:22	228:13	610:14	594:2
207:4	350:17	229:8, 15	612:17	COURT
316:7	351:7	232:21	613:24	1:1, 16
354:12	356:19	243:4	616:23	34:20
438:5	361:8	354:5, 7, 16,	625:3, 5	48:16
440:12	363:6	21 371:11	627:24	633:19
585:16	364:20	397:24	628:8	634:3
cord 77:10	378:6	548:7	629:20	636:13
Cornell	382:16, 20	correlation	counseling	637:20
489:3	412:13	426:2	92:16	courtesy
corner	413:20	451:24	Counselor	46:3 51:19
290:6, 8	431:12	452:14	434:9 490:1	52:19
429:2	436:8	correspond	counsel's	62:15
505:3 572:6	472:6	38:11 401:1	74:23	464:1 628:9
Corporation	507:4	CORRESPO	count 210:3	courtroom
6:13, 22	510:6	NDENCE	counted	331:5
	517:16, 17	25:7 59:23	210:6, 7	cover 482:1

covered	191:9	214:13	160:20	485:6, 9, 14
360:20	194:23	215:1, 12, 17	380:16	634:23
Coyle	196:18, 19	216:7, 12, 16	curious	CV.PDF
126:19, 20	197:16, 17	222:5	217:4	10:13
CRACKIN	200:9	223:9, 16	497:3	CVS 6:13
2:6	226:7	224:10, 18	502:15	625:24
create	236:20	225:21	570:6	cyclooxygena
308:23	502:21	227:16, 20,	623:20	se 529:22
created	Criterion	22 231:19	629:23	530:7
138:18	183:18	584:12, 22	CURRENT	538:10, 22
437:3	185:15, 19	Croen's	14:15	CYP2E1
489:16	186:6	228:3	49:23	21:20
557:16	CRITERION	cross-	129:10	522:20
creating	-A 16:8	culturally	185:13	523:9
281:5	critical	548:4	196:17	524:7, 14
credit	49:15	crossed	197:15	525:11
257:12	192:17	485:19	250:3	526:4
CRISTINA	295:6	cross-	272:17	527:13, 19
2:20	311:8	reference	286:24	cytoarchitect
cristina.delis	312:20	55:14	361:24	ure 418:24
e@lanierlawf	315:19	crossways	473:22	cytokines
irm.com	375:14	97:10	594:19	472:17
2:23	376:18	crowd	currently	
CRITERIA	403:19	409:9, 10	283:10, 18	< D >
14:19	440:18	crown	289:9	D.C 6:5, 19
15:14	441:3	214:13	341:22	dad 284:10
22:22	517:15	CRP 472:17	curriculum	443:17
23:21	538:2	crystal	38:6 39:1	448:16
111:22	criticism	335:23	64:16	dads 449:13,
141:6	161:17	Cuba 509:5	cut 113:7	14
144:10, 14,	162:11	culminate	205:2	dad's 444:5
16 156:5, 13	163:7 228:5	49:18	CV 37:3	Dalila 268:7
164:17, 20	criticisms	culprits	39:6, 9, 10	damage
165:7	230:7	241:11	53:9, 21	255:14
166:8	criticize	cultural	54:1 55:23	448:22
167:17, 23	157:23	236:22	65:10	449:2
168:5, 14, 19	criticized	Culturally	83:14	480:6, 9
169:16, 19	226:23	210:10	274:19	damaging
170:7	criticizes	culture	349:11	603:6
174:18	162:4	103:23	366:12	Dang 97:18
178:14	CROEN	cultures	373:11, 12	dangerous
179:14, 15	11:8, 15	104:4, 19	438:21	602:21
181:16, 18	212:2, 18	Cumulative	484:19	DANIEL
182:24	213:1, 20	117:8		4:15 5:4

Daniels 568:8	dataset 224:12	DAVID 5:16 14:12	282:1, 9	322:9
Daniels-Feasel 107:13	230:8 233:6	58:18, 19	283:20	324:9
127:11	datasets 290:24	98:24	285:5, 14	508:1
138:10	date 1:15	571:1, 9	303:17	572:16
139:7	27:21 34:7	572:22, 23	315:11	573:5, 15, 22
233:20	58:8, 10	573:21	319:19	575:18, 22
234:8	107:22	577:3, 9, 12	dead 62:6	576:7
453:6	137:10	david.cohen	deal 221:3	579:22
454:3 549:9	143:12	@butlersnow	dealing	581:4, 10
Danish 83:1	149:8	.com 5:20	40:11	decide 89:1
550:7	160:3	Davis 241:9	71:11	374:15
Danny 8:7	202:8	244:1	222:3	468:22
34:4	287:14	511:3, 9	374:4 450:4	decided
Data 82:24	288:14	day 63:2	deals 412:3, 6	214:8
116:5	293:20	106:24	DEAN 7:1	622:22
125:12	294:4	580:5	DEANNA	decidedly
131:12	308:16	585:7	6:17	171:9
142:19	355:11	593:15	deanna.lee@	344:20
159:22	368:8	601:5	btlaw.com	345:8
160:2	458:21	624:7	6:21	decisions
161:8	491:3	639:20	death	388:17
225:3	505:17	days 40:6	514:21	decline
230:9	588:5	104:1	515:2	159:17, 23
268:19	611:11, 14	266:7	debate	160:4 229:3
290:10	625:1	278:7	360:21, 23	decrease
398:23	637:2, 9	322:15	372:17	175:11
425:24	639:16	504:16, 21	debating	300:16
430:24	dated 37:18	505:10	182:22	deemed
442:5	40:2 101:8	574:2	decade	637:19
526:19	155:23	637:16	110:5	deeply
532:3	323:15	DC 7:22	121:10	85:15
552:9	324:10	DDS 160:2	405:10	532:16
553:15	388:24	161:8	decades	defect
616:12	392:14	232:19	108:17	540:18
620:1	411:11	de 249:13	129:10	543:1
database	429:2	257:19	214:6	defects
551:8	636:15	268:20	408:6 609:2	294:5, 11
databases	Dates	269:6, 11	DECEMBER	430:9
55:14 84:5	276:17	270:2, 3, 11,	27:14	541:4
114:15, 21	610:15, 22	17, 24 271:9,	58:13 59:3	543:13
	Dattaro	11, 13, 16, 24	60:8	Defendant
	379:18	272:11, 12	276:19	6:7, 21 7:6,
		280:24		12, 17, 23

defendants	defined	deletions	291:21	257:3
35:17	256:16	302:18	443:13	329:22
37:13, 16	272:7	DELISE	depends	330:2, 7
DEFENDAN	398:5 458:7	2:20	57:22	334:8, 15
T'S 32:13	defining	delivery	66:21	335:4, 7, 12
defending	186:9	49:16	125:11	365:19
576:20	definitely	275:13	246:3, 12	402:17, 23
577:5	171:22	423:3	285:19	455:6
578:15	192:19	458:21	313:3	495:4
defense	199:23	511:11	324:1	565:19
58:5, 21	472:11	DELUCIA	338:1, 2, 3,	567:21
59:21	479:6	4:14 5:3	13 340:6	590:1, 6
60:13 63:7,	492:18	demonstrate	356:1	591:9
11 409:8	498:18	224:5	450:23	612:10
485:9	549:6	demonstrate	451:2, 11	614:1
486:20	582:22	d 45:10	461:23	624:10
505:17	definition	171:8	469:5	625:1
570:8	135:6, 8	295:20	494:21	635:18
578:15	159:17	344:19	deploy	636:6, 8, 9
579:4, 10	161:5	372:22	374:15	637:3, 13, 17,
580:14	174:7	442:15	DEPO	19
612:12	175:10	470:4	19:12	depositions
625:5	257:22	500:13	DEPO.PDF	244:18
Defense-1	339:21	535:5	27:7	407:5, 14
612:9	definitions	Demonstrati	deponent	488:19
deficiency	612:20	ve 28:8, 16	34:16 639:2	564:23
46:15	definitively	32:15	depos	565:21
302:14	431:5	Denise 1:6	402:18	624:14
311:19, 21	degree	Denver 7:10	deposed	DEPO-
312:8, 10, 17,	110:24	deny 582:18	567:11	SULLENS
24 313:11	229:1	Depakote	deposing	21:10
487:9	232:16	501:14	567:17	depressed
deficit	DELAY	Department	637:16	603:1
82:20	19:9 30:9	78:8 81:10	deposition	depression
311:1, 6	73:13	375:2	1:8 9:18,	422:22
437:21	618:24	depend	21 22:14	603:4
438:2	deleted	509:16	33:2 34:10	deprivation
deficits	445:16	512:15	35:16 36:3	475:13, 15,
305:24	deletion	616:10	130:1	24 476:16,
437:16	252:7	dependent	155:4	22 477:16
440:14, 16	254:24	616:12	176:22	478:5, 16, 21
define	291:18	depending	189:11	deps@golko
66:22 258:8	302:7, 12	109:7	247:7	w.com 1:20
	318:16, 24		256:22	

deregulated 311:11, 13	586:19 591:3	detection 221:14	536:20 544:4	187:16 218:15
derived 309:3 538:9, 20, 21 543:3	Designate 490:8	DETERMIN E 13:8	development 76:1 80:17 81:4 103:22 295:7 311:9 312:21, 23 315:20 342:1 359:2 362:24 364:20 375:14, 15 376:7, 16, 19, 20 377:11, 17, 22 378:9 420:3 421:17 422:2 459:15 467:11 468:2, 13 472:18 481:11 482:9 490:21 493:19 500:24 513:11 514:19, 24 528:22 533:10, 17 535:20 538:3 540:6 562:15	415:1 487:10 528:23 533:19 development ally 164:23 device 380:5 diabetes 359:3 399:7, 9 423:1 459:16 464:19 465:6 482:4, 7 513:17 diagnosable 281:18 282:4 diagnose 281:15 386:16 DIAGNOSE D 15:15 77:13 144:13 160:7 164:14, 21, 22 174:9 175:12 209:16, 18, 19 231:3, 5 243:3 383:20 DIAGNOSE S 16:17 170:23 187:13 323:17 379:8 381:7
describe 613:15	designated 35:16 48:5	530:5 586:15 597:2 598:12		
described 108:12, 13 157:17 169:18 236:19 253:16 400:23	designation 380:6	determined 360:12 431:5 615:1, 23 616:7		
DESCRIPTI ON 9:16 10:5 11:5 12:5 13:5 14:5 15:5 16:5 17:5 18:5 19:5 20:5 21:5 22:5 23:5 24:5 25:5 26:5 27:5 28:5 29:5 30:5 31:5 32:5 220:17 266:20 624:24	desire 304:7 despite 186:8 603:9 608:14	determining 416:19 496:6		
	detail 108:22 153:12 548:1	detract 159:20 DEV 13:9 16:10		
	detailed 82:23 225:2	develop 308:9 380:10 384:5 401:17 494:9 498:12 542:19		
	details 178:5, 24 318:13 329:17 336:11, 21 365:17 456:10 483:13 540:24 565:10 566:11, 17, 22 578:5	developed 138:22 140:16, 23 534:14 DEVELOPI NG 18:15 314:16 400:11 415:16 418:11 421:7 472:20 490:16, 18 499:14 519:2 520:4		
	detect 139:24 140:4, 9, 17 204:5, 6 333:1 334:2 549:11			
descriptors 353:21	desensitized 210:15			
deserve 147:23	detected 204:10			
design 338:2, 6, 15				

384:3	385:23	549:3, 7, 20,	308:24	differentiatin
456:13	426:16	21	314:15	g 422:4
diagnosing	454:15	diagram	318:6	differentiatio
185:15	610:7	372:10, 14	320:12, 13	n 418:23
202:15	612:20		325:16	difficult
236:9	630:19, 20	diametrically	326:7	150:9
242:10, 20	DIAGNOSIS	64:19	339:18	dig 335:19
	_,J 16:9	DICICCO-	355:13	464:10
DIAGNOSIS	DIAGNOSTI	BLOOM	373:19	623:19
12:15 20:7	C 15:14	22:7	375:24	DiGeorge
111:23	22:22	dictated	384:16	318:14
115:10	23:16	616:7	398:13, 14	digital 152:6
137:13, 17	111:21	diet 435:22	399:1	DiLavore
144:6	138:7, 11, 17	differ	400:19	138:19
159:18, 23	139:4, 21, 22	478:22	404:7	direct 234:2
160:5, 10	141:6	difference	420:12	371:21
161:1	142:5	118:8	424:12	372:1, 5
165:8	147:4	119:3, 14, 20,	438:12	636:21
166:9	148:3	24 264:18,	439:3	Direction
168:23	150:5	23 266:22	449:14	33:5
174:19	151:16	564:17	453:3	directions
180:9	156:5, 12	569:20	458:1	44:11 49:7,
182:12	166:8	622:6	469:17	9 123:6, 7
183:19	168:7, 14	different	470:24	604:6, 8
186:8	169:16, 18	47:20	475:9	606:16
188:3, 4	170:24	100:22	477:9	directly
190:22	174:18	116:7	479:2, 5	536:19
200:6	181:16, 18	120:8	519:21, 23	director
201:11	182:23	124:20, 22	528:12	397:8
203:16	191:9	140:10, 15	535:22	425:17
205:22	194:22, 24	148:24	548:4	505:8, 13
206:9	221:17	149:6, 18	564:14	507:14, 21
207:13, 24	222:8	151:2	593:18	DISABILITIES
208:4, 9	224:8, 22	164:17	618:18, 19	ES 20:13
209:2	226:7	165:6	differential	534:5, 17
210:17, 23	230:14	186:19	385:16, 20	disability
214:9	231:13	228:15	527:15	164:16
226:6, 10	232:16	245:2, 4, 5	528:13	211:22
236:21, 23	233:1	261:5		231:4
242:17	234:3	269:21	differentially	303:4
302:16	236:9, 20	283:3, 5	228:19	356:16, 19
325:5, 24	379:20	284:17	522:19	358:16, 23
361:23	456:22	300:6, 14	differentiate	359:22
380:7	548:9	307:3	d 523:8	452:23

453:4	150:4	377:18	315:10	454:10, 15
454:8	151:15	399:11, 14,	321:16	455:18
482:22	272:8	20 400:2	343:14	458:20
483:5	discover	456:19	344:11	465:14
disabled	387:4	487:11	349:17	469:13
164:23	534:18	528:14	350:17	470:14, 19
disagree	540:14	Diseases	353:23	473:5, 15
53:4 57:21	discovered	195:2	354:2	474:2, 19
65:19 68:5	65:8	224:21	359:21	475:5, 20, 22
76:18	discoveries	DISO.PDF	360:10	479:16
224:12	493:2	31:21	361:4	482:17, 23
288:18	discovering	DISORDER	362:10, 17	484:9
386:11	400:20	14:20 16:9	363:1	487:14, 24
417:15	discovery	17:13	365:21	501:11, 19
419:1, 9, 20	257:16	20:11 26:8,	366:2	502:5
421:21	discrepancy	12 27:17	367:16	504:4, 14
481:17	135:24	48:8 51:10	368:2, 20	505:20
533:1	discuss	57:15	369:12	506:7
595:4, 12	147:7 575:4	69:23 70:2	370:20	509:12
617:7 622:3	discussed	77:14	371:3, 23	516:13
disagrees	61:11	103:22	372:3, 24	517:20
224:15	560:10	104:6, 22	373:3	519:19
disc 177:4	584:8	105:24	375:7	522:22
disclose	discussing	106:12	383:14	523:11
48:14 49:1,	411:18	108:13	388:11	524:8
3 54:16	523:14	111:11	390:17	525:24
61:18, 24	595:16	125:16	391:23	526:8, 15
disclosed	discussion	126:13	392:18	528:24
565:5	60:16	134:19	393:2, 19	536:11
disclosure	64:14	168:5	398:2, 3	538:8
38:5 39:3	370:18	170:3	415:7	546:23
40:6 63:13,	398:18	172:5	420:7	547:21
23 64:5	403:4	178:14	422:13, 17	599:17
129:24	486:23	183:19	423:17	603:12
402:12	577:23	194:23	424:19	605:3
disclosures	578:3	199:10	425:3, 12	612:21
37:17 54:17	585:12	229:7	426:4, 16, 20	626:24
DISCOR	discussions	231:6	427:12, 22	DISORDER."
13:9	59:6 507:20	242:22	442:7, 18	.PDF 25:17
DISCORD	Disease	244:19	443:7	disorder-
16:10	127:2	268:4	444:7	related
discordance	129:11	285:9	446:13	538:13
147:3	191:20	290:13	452:5	
148:2	362:1	295:11	453:1	

DISORDER	534:22	doctor	606:14	194:15
S 10:17, 21	535:1	35:11	613:2	195:22
11:10 13:9,	dissertation	41:21 52:2	635:12	197:19
12 14:11, 16	173:11	55:23 56:4,	doctors	218:23
15:9, 16	175:15	10, 14 60:4	57:21	220:6
22:11	176:7 177:9	70:3, 5, 13	95:15	223:11
23:11 29:9	distinctly	124:7	242:10, 19	227:23
41:3 42:4,	283:3	130:20	244:24	235:3
19 52:7	distinguish	163:2	593:17	240:15
63:5, 18	398:15	183:2	594:8, 13, 14,	249:13
82:21	distracted	187:20	18	258:16
110:4	441:16	190:3	DOCUMENT	259:13
124:11	distress	192:1	T 1:5	263:4
181:17, 20	423:2	208:24	35:21 37:9,	267:22
182:3	DISTRICT	210:18	23 41:11, 16	277:23
187:17	1:1 411:16	212:24	54:9 72:19	282:20
218:15	631:17	218:10	74:20	289:17
228:20	disturbs	219:8	76:11, 14	293:24
274:2	252:5	240:5	77:2, 17	296:15
290:3	divalproex	241:14	79:8 86:15	301:5
297:20	501:10, 15	254:9	93:1 94:22	306:7
298:4	diverged	276:9	101:4	308:19
342:5	458:22	304:14	106:18	321:3
394:14	diverse	307:13	107:18	332:4
397:18	373:23	330:11	109:12	333:13
417:2	division	336:23	114:2	336:15
486:15	365:21	346:18	122:9	341:13
612:23	dixit 247:3	350:15	127:20	342:15
disproven	dizygotic	356:14	129:19	349:4
602:23	272:9	359:8	131:24	352:1
disrupted	DLC 1:5	368:24	136:8	353:3
532:5	DNA 21:19	411:9	147:12	357:10
disruption	104:15	501:8	150:10	359:13
448:17	252:6	509:3	154:24	361:18
533:7	255:2	536:7	155:2	364:9
disruptions	291:7	546:14	170:10	369:22
528:21	312:19	550:17	172:17, 19	374:22
533:17	340:19	557:2	176:2	375:17
disruptor	521:20	597:10, 20	181:1	379:13
535:8	522:4	598:21, 23	183:13	388:20
DISRUPTO	525:10, 21	599:3	187:8	391:7
RS 16:21	DNA-related	602:17	190:9	392:3
17:7	252:6	604:2, 9, 17	192:6	394:4
349:10		605:11	193:1	401:7

404:16	263:11	71:12, 19, 20	277:3, 14	dramatically
411:5	307:15	72:2, 3, 4, 10	278:3	108:17
417:6	350:20	73:22 76:5,	283:2	draw 620:5,
425:19	373:14	15 78:17	294:4	14
427:16	391:12	79:1, 5	301:9	drinks
429:13	406:22	80:23 81:1,	308:23	483:10, 12
433:14	417:12	15, 19, 23	322:11	drive
436:12	431:24	87:20	325:22	157:16
439:11	434:16	88:11, 20	347:7, 14	610:6
454:22	464:8	91:8, 11, 23	370:4, 5	driven
488:5	486:24	92:18	380:23	604:12
501:21	529:16	93:18	382:12, 22	608:3 609:5
503:21	593:11	97:15, 21	383:5, 9	drop 145:17
504:23	637:8	98:6, 11, 13,	391:11, 17	dropped
507:1	Dollar 7:23	19, 20, 24	394:8	215:17
525:2	domain	99:1	396:19	Drs 71:12
530:18	315:13	109:22, 23	401:14	drug 80:17
534:6	domains	114:7	402:22	301:18
539:9, 24	440:18	123:15	404:7	379:4
541:19	441:4	124:8, 12	407:24	380:4
542:15	dose 92:12,	125:15, 19,	436:20, 22	562:15
546:16	14 94:6	20, 21, 24	439:15	drugs 91:13
551:13, 22	412:12	126:10, 17,	455:5	307:4
553:11	dose-	19, 20 128:1	473:8, 19	314:10, 23
554:13, 22	dependent	129:1	487:3	491:13
555:4, 7, 10	521:19	131:10	513:7	493:4
568:18, 21	doses	152:18	524:2, 3	498:23
580:17	103:24	156:8	539:13	499:11
585:10	598:12	173:12	540:4	500:2, 23
596:21, 22,	double	180:11	541:23	509:22
24 600:2	351:17	192:21	542:19	drug's 82:16
612:11	doubt 231:2,	193:9	593:10	DSM 22:22
617:19	7, 12	194:3, 9	594:16	141:7, 10
618:3, 21, 23	downregulat	200:20	601:4	142:5
documented	ed 104:16	206:2, 12	616:13, 23	164:18
180:7	downstream	216:3	draft 445:15	168:4
Documents	371:2	217:22	Drafts	193:23
33:8 36:22	DR 9:22	223:6	445:10, 11	195:1 398:5
177:4	51:14	224:14	dramatic	DSM5 15:14
235:23	52:12, 13, 14,	243:10	111:10	DSM-III
585:18	15 56:3, 7	262:22	133:6	141:10, 18
doing 56:22	57:4, 5, 13,	263:8, 9, 15	142:10	161:10
67:22	17 69:11, 16,	264:4	232:18	164:19
188:8, 21	18 70:23	276:10, 13		166:2

168:8	179:14	dynamic	464:12	23:11 41:1
180:13	180:13	143:12	539:23	42:3, 18
DSM-III-R	181:15, 18	611:1	573:4	46:4 63:4,
166:2	182:1	dysequilbriu	EARLY	18 122:13
DSM-III-	183:17	m 290:21	16:8 47:11	273:24
Revised	185:14	dysfunction	183:18	274:21
141:14, 21	186:5	311:20	203:13	288:22
161:12	187:12	312:7	279:1	289:22
165:17, 24	188:4	516:12	375:15	359:19
166:13	190:20	536:8	376:20	365:22
167:2, 14, 23	194:4	DYSREGUL	384:1	422:12
DSM-IV	196:18	ATED 15:8	418:22	486:14, 24
16:18	197:16	268:3	419:7	505:19
141:23	613:13	DYSREGUL	420:2	601:5, 14
161:14	Dsullivan@h	ATION	490:19	EDITION.P
165:18	sgllp.com	22:8 46:18	492:4	DF 27:22
168:15	4:18 5:7	49:13	493:18	editions
169:1, 13	DUANE	416:24	499:12	164:18
172:6	7:18	438:9	504:16, 21	editor 52:8
180:13	duces 36:21	487:13	526:13	editorial
181:15	due 135:24	518:2	528:2, 22	224:9
187:13	170:22	dystocia	564:1	Education
188:2 194:5	308:1	511:10	early-life	211:22
DSM-IV-TR	378:21	< E >	394:12	222:4, 7
16:18	482:6	e.g 360:14	397:16	501:2
179:15	567:8	454:4	easier 437:5	educational
187:14	612:19	493:21	easily 282:4	180:8
188:3	630:2, 15	535:19	East 2:8	212:23
193:20	duly 35:3	E-19 419:15	3:4 7:21	226:8 231:9
194:1	636:5	E-22 419:15	easy 438:14	EEG 314:8,
196:19	duplication	E3A 313:17	547:16	14
197:17	291:18	Eagles	eating 48:11	effect 81:3
DSM-V	314:1, 18	582:17, 20	ECONOMY	112:13
14:19 16:7,	uplications	earlier	21:13	165:3, 11
17 23:20	313:23	127:4	edelucia@hs	262:17
142:1	314:6	140:23	gllp.com	280:17, 22,
168:14, 24	during-the-	161:11	4:18 5:6	24 285:15,
169:12	time-of-	292:14	edge 362:23	16 300:17
170:4	birth 275:17	331:10	364:19	337:2, 5
171:19	Dutch 83:1	385:23	edited	366:22
172:6	duty 54:16	386:1, 17	289:22	385:10
174:7	61:17	390:13	EDITION	437:13
175:9		432:22	13:13	483:11, 16
178:13			18:20	

506:10	eggs 448:20,	eligible	employed	enormous
518:3 537:3	21 493:7	188:3	383:10	238:1
effective	eight	eliminated	employer	543:18
92:12 94:6	129:13	161:2	506:20	enriched
339:5	203:3	Elmo 40:24	en 327:23	522:5
effectively	209:15	102:10	607:3	enrollment
494:7	505:10	424:23	encephalopat	228:14
498:10	564:24	elucidation	hy 567:8	entire 76:11
EFFECTS	624:5	605:10	endeavors	233:2
15:14	629:24	E-MAIL	615:22	252:7
239:22	eight-year-	28:10 41:9	634:10	255:1
240:1	old 131:13	60:5, 18	ended	559:20
285:17	eight-year-	64:3	266:18	entirely
286:3	olds 456:20	463:16	279:15	235:19
290:20	EILEEN	574:9	284:12	264:9
291:1	4:14 5:3	576:3, 6	294:15	277:8
353:17	either 71:5	579:22	302:2	317:6
354:9	98:21	580:1, 3	309:23	324:1 485:4
355:16	135:4	615:6	322:17	entities
371:2	254:24	623:14, 16	401:21	552:19
439:1	270:2	e-mails	437:23	560:7
451:14	300:15	445:4	441:1	entitled
483:9	309:16	463:4	539:19	42:14
499:1	447:9	570:5, 16, 19	541:10	73:11 95:4
500:14	484:22	574:21	542:8	109:20
502:4	electrophysio	577:21	543:20	130:5
503:7	logical	578:9	endocannabi	178:13
518:8	402:2	580:2	noid 516:11	220:11
535:14	437:8, 16	613:24	ENDOCRIN	227:18
537:2	element	embedded	E 16:21	259:16
538:12	46:14 487:9	144:9	17:7	268:2
efficient	elemental	316:11	349:10	290:2
161:5	46:18	450:2	533:7, 8, 15,	358:14
effort	487:13	emerge 50:3	18 534:21,	379:19
400:23	elements	emerging	24 535:8, 14	392:15
461:6, 19	591:4	360:9	ends 51:6	416:23
efforts	ELEVATED	emphatically	387:11	423:11
615:22	19:8 30:9,	560:11	446:11	490:19
egg 269:23	13 73:12	empirical	502:1	524:18
272:14	77:8 456:24	181:14	engine	525:10
285:1	Eli 563:23,	290:10	449:18	553:16
319:21	24	employ	England	entitling
415:19	elicit 104:2	124:21	71:8 484:5	556:16
			enjoys 556:1	entity 168:7

entry 58:12 60:7 229:5 235:8, 9 572:15 ENVIRONM ENT 12:19 49:14 135:2 243:23 265:7, 22 271:16, 21 279:9 339:19 372:11 380:20 382:7 384:19 385:1 403:6 474:23 491:15 ENVIRONM ENTAL 13:18 28:20 71:24 75:5 81:11 111:3 112:16 113:12, 15 135:6, 9 171:11 239:1, 17, 22, 24 240:9, 12 241:11 244:11 245:6 253:13 271:6 272:3 273:13 279:22 280:1 299:10, 12,	22 303:8 304:5 306:15, 24 307:4, 10 320:1 327:15 339:11 340:2, 8, 22 341:18, 21 342:2 343:8, 13 344:2, 21 345:11, 16 346:7, 22 347:9, 15 348:20 349:15, 17, 18 350:22, 24 351:3, 11, 21 353:16 355:15 356:3, 6, 17, 20 358:21 360:13, 22 362:18, 22 363:16, 18 364:18 366:22 368:4, 16 370:23 371:18, 22 372:6 375:5, 12 376:2, 17 380:16 385:4, 5, 20 386:7, 15 390:1, 4, 16 393:12 398:10 403:21 404:8 406:8 450:18	453:17 454:4 459:13 474:5, 9 487:23 489:22 493:3 500:1 501:1 518:24 520:2 525:23 526:11, 22 527:24 534:10, 12, 19 612:6 environment ally 272:1 474:17 ENVIRONM ENT'S 26:16 389:5 enzymes 494:3 497:22 epidemic 224:20 epidemiologi c 219:18 epidemiologi cal 49:24 82:18 99:23 278:20 295:20 296:8 347:15 442:11 473:24 512:7 536:4 epidemiologi st 129:2 EPIDEMIO LOGY	10:15 99:12, 13, 23 216:13 218:12, 22 241:7 394:9 396:20, 21 397:13 450:5 EPIDEMIO LOGY.PDF 12:16 epigenetic 249:11 377:13 493:6 494:4, 5 497:23 498:8 499:23 500:12 epigenetics 340:16 491:19 492:13, 19 494:13 epigenome 491:16 498:24 499:15 EPIGENOM IC 25:15 344:9 346:8 equal 403:22 450:20 451:8 509:13 equally 461:14 equitable 555:18 EQUITY_M OUNT 24:9	equivalent 160:8 Eric 123:14, 19, 20, 21 183:19 224:9 228:10 Erik 8:10 108:10 123:10 136:7 137:9, 22 141:2 148:12 149:9 158:24 173:5 174:1 185:3 err 330:23 331:3 errata 637:6, 9, 12, 15 639:12 error 199:10 200:16 errors 354:12 especially 92:17 388:4 465:3 602:21 609:3 ESQ 2:3, 4, 5, 6, 7, 14, 19, 20 3:3, 8, 14, 15 4:3, 4, 5, 6, 7, 14, 15 5:3, 4, 9, 10, 16, 17 6:3, 9, 16, 17 7:3, 8, 14, 20
--	--	--	--	--

essential	574:1	274:13, 17	596:24	224:20
46:14	624:2, 18, 20	275:4	627:15	225:5
380:18	estimated	346:23	evaluated	226:16
487:9	233:24	355:4	620:13	273:4
essentially	264:16	527:17	621:6, 13	274:11
60:20	277:18	528:16	evaluating	275:15
104:14	337:2	532:21	496:5	276:3, 6
269:24	454:14	ETIOLOGIE	558:16	346:20
286:6	456:13	S 26:9	596:20	365:23
296:6	612:3	369:12	EVALUATI	367:6, 13, 21
437:20	estimates	etiology	ON 13:7	438:8
438:9	127:3, 5	51:10	615:14	473:22
439:20	129:10	171:9	EVALUATI	511:15
449:22	170:18, 23	304:21, 24	ON_OF	518:1
establish	178:15	307:15, 23	12:8	524:14
604:14	196:16	314:4	evaluations	526:9
606:4	199:2	320:1	180:8	544:9
established	260:23	343:6	EVAN 3:3	613:20
280:1, 7	261:6	344:19	evan.janush	620:6
289:10	607:23	345:8	@lanierlawfi	evident
308:1	ESTIMATE	360:17	rm.com 3:6	160:16
329:5	S-PMC.PDF	366:2, 23	event 269:6	413:19
351:19	14:20	367:16	275:7	evidently
356:5, 9	ET 11:8	368:1, 14	events 43:2	437:6
361:12	14:7 16:13	383:24	51:9	evolved
363:17	18:10	385:7	268:21	605:15
367:1	31:10	402:4	273:6, 13	exact 58:10
386:8	159:14	606:23	274:12, 16	171:21
400:7	161:9	Europe	275:17, 24	175:6
415:5	193:18	510:8, 14, 22	346:21	444:12
416:16	224:10, 18	626:22	366:1	600:9
435:10	228:12	627:7	367:15	exactly
469:19	229:2	European	421:11	56:21
470:11	230:7	510:17	512:9	165:19
476:3	232:15	550:7	eventually	206:6
482:19	Ethan's	evaluate	541:7	232:4
492:15	330:4	118:5	Everybody	324:16
495:1	331:11	121:5	370:12	363:5
501:14	332:13	227:8	616:4	364:4
517:2, 7	ethics 61:23	299:4	evidence	404:20
535:24	etiologic	327:21	43:1 49:12,	442:19
536:2	423:24	484:14	23 51:7	449:4, 6
estimate	etiological	595:7	81:6 211:5	457:12
337:4	43:3 273:7		222:9	

476:12	320:13	exercise	180:24	341:7, 12, 14
573:7, 8	399:3, 15, 18	205:11	181:2	342:16
EXAMINAT	424:4	587:12	183:12, 14	348:24
ION 35:6	449:21	exert 518:8	187:7, 9	349:5, 8
350:12, 16	exceeding	Exhibit	190:8, 10	351:24
593:7	551:20	32:14	191:17	352:2
616:19	Excel	35:22 36:2	192:5, 7, 24	353:1, 4
examined	136:14	37:8, 10, 24	193:2	357:9, 11, 19
35:4 426:1	excellent	38:3, 4, 24	194:14, 16	359:12, 14
466:7 606:6	66:10	41:9, 12, 17	195:20, 23	361:17, 19
examines	89:10 98:2	46:7 54:7,	196:5	362:7
198:22	213:24	10 63:3	205:20	364:7, 10
examining	489:24	72:17, 20	211:17	368:13
164:13	excerpt	77:1, 3	218:21, 24	369:21, 23
example	105:11	79:7, 9	220:7	374:21, 23
137:5, 12	excessive	86:14, 16	222:1	379:12, 14
145:9, 23	467:13	92:24 93:2	223:10, 12	388:19, 21
146:1	exchange	94:21, 23	227:15, 18,	391:1, 8
166:21	234:3	101:3, 5, 15	24 233:18	392:2, 4
233:23	excitatory	106:17, 19	234:20, 23	394:3, 5
240:14	420:10	107:3, 16, 19	235:4	395:9
254:21	517:18	109:10, 13	240:14, 16	401:8
258:11	exciting	114:1, 3	258:13, 17,	403:9
265:2	437:22	115:6	21 263:5, 21	411:6, 10
270:14	exclude	122:8, 10	264:2	415:4
296:2, 13	502:18	127:10, 19,	267:21, 23	416:7, 13
301:4	excluded	21 129:18,	274:3	417:5, 7
309:18	502:22	20 130:3	276:11	425:14, 20
381:18	503:11	131:6, 18	277:24	429:11, 14
399:5, 21	exclusively	132:1	282:19, 21	433:12, 15
403:8	135:9	134:16	285:3, 13	436:10, 13
408:16	Excuse 88:5	135:15	287:14, 18	438:21
427:1	305:5	136:6, 9	288:23	439:12
434:24	Excused	139:6, 10	289:6, 16, 18	453:15
435:9	635:17	141:2	293:17	454:23
442:23	excuses	147:11, 13	294:1	455:3
452:17	238:24	156:17	296:12, 16	458:6
544:23	239:6	157:8	301:4, 6	459:19, 23
559:4	executive	163:23	306:8	471:24
560:4	82:22	170:9, 11	308:12, 20	472:13
597:4 611:9	631:22	172:18, 20	321:2, 4, 24	481:22
examples	633:18	175:24	332:2, 5	484:2
237:7		176:3	333:11, 14	488:2, 6
280:9, 13		177:20	336:14, 16	501:20, 22

502:16	existed	492:5	expertise	242:20
503:19, 22	506:10, 11	493:18, 21	252:3	425:6
513:5	existing	494:16	253:21	EXPLANAT
514:12	342:3	495:14	254:10, 14	ION 28:15
519:11	463:24	498:22	418:15	53:8 62:7,
523:2	exists 46:1	499:9	530:15	11 136:17
524:23	119:24	Experiment	experts	233:2
525:3	249:22	412:21	164:14	236:2
530:17, 19,	367:21	538:12	408:12	610:10
24 531:3	exome	616:10	575:1	611:20
534:1, 7	292:1 293:5	Experimenta	expires	explanations
539:3, 10, 22	expand	l 99:18	639:21	536:10
540:1	168:6	100:5	explain	610:23
541:17, 20	expanded	EXPERT	91:20	611:1, 12
542:16	102:11	10:7 17:11	120:18	exploration
545:3	expanding	24:21	136:19	361:11
546:15, 17	430:15	35:17	146:19	535:3
549:9	expansion	37:17 47:6,	206:10	explore
551:12, 14	141:5	10 48:5	207:13	249:10
553:10, 12	156:5, 12	55:8 58:6	208:10	390:16
554:11, 14	expect	83:11	232:18	explored
555:5, 8, 11	195:15	84:16 86:3	235:14	522:3
568:16, 19,	320:11	107:4	290:16	EXPLORES
22 569:1, 3,	509:12	146:14	322:3	31:20
13, 15	561:16	251:17	369:1	392:16
570:23	expected	312:9, 17, 22	451:13	exploring
572:7, 9	526:13	313:19, 22	explained	348:2
580:16, 18	528:2	314:1, 3, 5	43:21	376:22
595:23	experience	379:10	111:14	explosion
597:5	143:7	402:18	159:15	225:5
599:7, 15	146:12	406:24	160:23	expo 389:15
601:7	182:21	409:7, 11	171:2	exponential
610:8	212:20	411:11	208:3	257:15
612:13	213:16	446:22	210:18	
617:17, 20	214:7	454:2	235:16	exponentially
621:12	323:21	479:6	236:13	291:8
exhibiting	529:8	480:15, 23	237:6	exposed
186:8	530:10	483:14	318:23	254:1
exhibits	610:20	537:21	361:24	279:10
116:12	615:15	592:9	540:16	450:19
557:17	EXPERIEN	624:11	explaining	exposing
exist 67:4	CES 29:21	627:4	170:1 211:1	103:23
215:10	490:19	629:12	explains	exposome
269:14	491:14		207:24	380:15

389:16	375:13	extensively	596:14	113:12, 18
390:2	376:17	524:12	600:2	120:8
Exposomic	377:12, 17	extent	601:17	134:22
389:12, 20	378:11	74:18	609:6	135:10
390:3	380:17	122:1	612:8, 15	136:1
exposure	382:3	173:15	614:23	137:3, 16
77:12	383:13	184:14	615:2	157:15
92:13 94:5	384:10	201:18	factor	168:17
271:7	386:22	291:21	68:14	169:20
298:7, 24	390:1, 4	330:11	85:14, 19	171:11
299:21	391:22	332:18, 19	134:24	191:7
337:5	392:17	435:11	135:5, 11	208:19
346:7	393:12	External	248:10	209:1
353:16	422:20, 22,	493:20	273:20	233:4
355:15	24 450:18	494:15	310:14	236:13, 18
356:3, 6	492:5, 12	495:14	311:8	237:12
362:13	500:5	extreme	339:11	238:7
371:19, 22	503:12, 17	457:3	340:2	243:1
373:2	520:10	extremely	362:22	244:12
385:11, 17,	521:1	160:17	364:18	249:11
20 387:14	579:5, 7	544:4	368:9	265:10
398:9	express	eyes 409:24	386:7	269:22
413:6	118:9	410:12	435:8, 19	274:7
450:19	expressed	EZRA	442:22	278:20
451:5, 6	420:8, 18	13:15	457:4, 9, 20	306:15, 24
484:7	expressing		465:6	307:4, 10
491:13	285:7	< F >	466:6	339:18
499:10, 24	EXPRESSIO	facilities	467:17	340:8, 17, 23
500:21	N 29:21	67:3 97:24	468:6	341:21, 23
501:9	104:3, 12, 13,	facility 97:1	501:11	342:2, 3
521:17	18 105:18	244:3	537:14, 17	343:14
536:18	106:5, 9, 10,	552:14	538:2	344:2, 22
537:19	14 248:4	fact 111:12,	609:1 612:6	345:12, 17
598:13	291:7	13 113:9	FACTORS	347:2, 5, 9
615:1, 2	340:18, 21	162:3	11:20	348:2, 21
exposures	341:19	166:7	13:14 23:7	349:16, 17,
50:1	490:20	180:11	28:20	19 350:16
265:24	493:19	222:10	42:15	351:21
303:8	499:1	226:17	44:10	356:18, 21
304:5	527:16	233:5	49:17 50:3,	358:21
346:22	528:12, 13	425:4	16, 22 51:17	359:1
359:4	532:19	435:10	109:21	360:8, 14, 22,
370:23	538:10	527:15	111:21	23 361:1
372:7		550:18	112:16	362:8, 11, 19

363:16, 18	613:6, 10	521:9, 10	596:9	416:20
367:1, 22	630:3, 9, 16	531:14	619:16	608:1
368:4, 16	FACTORS.P	533:4, 5	familiarize	February
370:22	DF 23:14	583:22	103:1	47:23
371:18	facts 59:13	589:7	184:5	308:17
372:2, 6	64:23 68:8	629:15	186:21	369:15
376:2	208:6	fairness	187:22	391:5
377:15	299:2	192:11	familiarizing	429:4
378:2, 24	303:11	195:3	184:8	433:18
387:5	338:18	220:10	families	436:18
390:16	340:12	307:17	204:14, 15	FEDERAL
394:12	560:13	fall 571:13	214:8	27:13
397:16	factually	fallen	283:9	48:16
400:24	53:22	305:23	323:18	54:13 55:8
403:21, 22	200:5 408:3	false 146:8	354:1	348:19
404:8, 10	fail 637:18	404:14	Family 78:9	551:4
406:7, 9	failed	622:13	283:14	552:10
422:17	204:12	false-	fan 582:9	feel 105:8
423:11, 16,	413:24	positive	far 319:9	190:16
22 424:18,	438:19	290:14	354:3	255:12
22 425:2	fails 546:5	familial	402:19	434:18
428:2	fair 64:16	473:17	563:6	629:11
430:1, 2	65:12	familiar	564:10	feels 330:18
434:23	86:12	65:23 72:9	farther	Fein 174:4
441:22	106:15	74:19	243:18	FELLOWSH
444:15	116:21	76:14	459:5	IP 31:19
449:22	133:22, 23	159:9	faster 384:2	392:16
453:17	143:11	174:13, 16,	fast-forward	393:8
454:4	154:15	22 179:21	310:8	felt 578:20
457:18	188:21	184:15	fast-tracking	579:1
459:13	189:3	223:5	379:5	femur
473:9, 18	205:5	241:2	father 285:6	245:13, 14,
475:10	227:12	260:16	father's	22 246:6, 7
493:4	257:5	315:7, 24	284:3	305:6 318:7
502:6, 21	261:19	317:1	fault 259:7	Ferretti
503:3, 15	307:22	327:14	faulty	41:4
512:18	334:21	369:13	449:17	fertilization
518:24	400:9	379:3, 9	FDA 23:16	264:21
520:2	408:10	392:24	379:19	fetal 49:15
525:23	414:13, 20	415:24	380:5	80:17 81:4
526:12, 23	419:24	456:9	FEASEL	92:13
528:1	462:24	531:11	21:7	342:1
604:5	463:9	559:9, 13	features	359:2
	490:23	571:6	304:18	375:14

376:19	FILE 25:7	FINDINGS	347:20	185:18, 22
423:2, 13	108:3	23:20	381:15	189:1
452:22	242:3	46:13 76:1	384:21	217:23
459:14	569:7, 24	109:22	428:20	228:10
467:11	580:21, 24	171:8	435:3	239:7
468:2, 12	632:20	179:11	446:3	240:23
483:3, 7, 14,	filed 632:13	186:4	449:11	241:3, 19
15 513:21	fill 276:22	196:15	474:12	244:17
545:12	590:5	206:6	506:18	257:20
fetus	610:15	290:14	549:15	268:7
472:20	final 519:18	344:18	626:8, 9	269:6
483:9, 12, 17	604:1	355:5	632:10	273:24
493:8	Finally	428:6, 16	finite 448:20	284:5
513:10	139:20	432:2	FIRM 2:12,	288:22
519:2	606:13	466:4	17 3:1, 8	289:24
520:4, 13	financiers	470:11	59:21	291:12
521:4	373:18	487:8	132:8	324:21
fewer 174:8	find 70:15	536:14, 17	576:19	328:17
field 57:14	73:14	586:13	577:4	342:23
124:10	101:21	613:18	579:10	345:5, 6
126:12	110:8	fine 117:17	firmly	355:3
319:12	139:16	124:9	470:11	364:15
325:20	293:19	132:7	first 35:3	370:2
432:8	305:21	417:24	40:2 46:4	389:23
492:19	351:5, 13	468:9	49:11	392:22
Fifth	352:9	591:11	52:23	393:6
359:19	365:8	592:17	58:12, 16	415:8
490:6	382:24	finest 82:4	59:1, 11, 15	416:18
fifth-grade	422:2	88:13	60:6 63:1	418:6
249:20	574:13	finish 51:22	65:3 72:3	421:18
fight 279:6	576:7	52:2 69:3	73:3 81:2	427:4
Figure	586:20	85:5 88:8	89:16	428:9
160:16	608:17	90:1 91:2	93:18	430:13, 14
185:8	623:10, 13	92:3 112:2,	108:9, 13	446:10
240:6	628:4	3, 21 113:3	110:11	455:17
324:20	FIND_MOU	121:21	122:12	460:15, 21
346:14	NT 19:9	144:3	136:16	461:7, 8, 21,
371:17	finding	163:15	142:24	24 462:3, 9
538:19	283:11	175:21	147:18, 21	463:18
figured	427:6	178:10	148:18, 19	467:6
38:18	433:10	190:12	159:22	468:24
278:14	437:22	225:12	168:7	489:15, 22
Figuring	458:19	253:7	169:17	492:3
463:22	523:17	304:22	171:7	499:22

508:8	454:16	folder	583:12	198:20
524:4	456:17	115:14	584:20	201:22
533:3	547:23	Folic 423:5	Footnote	205:2, 4
542:22	575:1	425:11	156:13	209:9
543:10	621:16	426:2, 11, 17	193:6, 8, 17	213:4
547:11	622:21	427:3, 7, 10	203:11	227:5
553:22	630:3, 9	431:1, 6	215:18, 21	234:16
569:10, 14	fixed 410:5	folks 71:13	216:1, 12	237:20
570:7	flawed	575:24	217:5	238:15
571:24	198:2, 9	598:16	218:11, 18	239:19
572:15	flip 39:19	609:7 622:9	219:4	246:2, 11
573:1, 5, 20	96:8 107:7	follow	260:5	247:5, 22
574:2	173:16	112:10	416:8, 14, 22	248:21
576:8	FLOM 5:9	113:4	420:5	256:14
580:6	Floor 3:4	144:3	523:21	267:17
583:23	6:11 7:15	552:3, 5	footnotes	274:23
584:17	Flower 7:15	following	145:18, 19	282:6
602:6	fluorescent	309:22	217:1	299:14, 24
606:21	292:20	540:9	forebrain	312:15
618:15, 16	FMR 295:6	542:21	420:8, 18	318:10
623:16	FMR1	579:9	forego 93:24	323:23
628:14	295:5 298:6	follows 35:4	foregoing	325:8
FISH	FOA-	424:17	636:18	326:13
292:20	FUNDING	follow-up	639:6	327:4, 18
540:19	16:22	160:2, 8, 9	FOREST	328:5, 22
fit 218:19	focus 343:9	228:17	21:8 169:15	336:9
five 40:6	375:12	230:11	forgotten	337:7, 17, 23
108:9, 17	376:17	607:8	499:13	339:15
117:9	391:17	Fombonne	form 47:8	340:5
119:22	focused	192:21	48:19	341:1
120:17	83:8	193:9	53:15 57:1	352:14
136:18	185:19	194:3, 9	59:10	357:3
137:3	394:21	224:9	60:11 64:8,	361:6
208:24	400:10	food 48:11,	22 68:8	363:3, 13
234:8	502:18, 20,	12 61:11	70:21 71:3	366:5
237:7	23 503:3, 11,	329:3	78:19 88:4,	373:21
256:21	15	379:4	17 89:20	378:18
280:15	focusing	380:4	99:6	383:3, 16
286:11, 19,	131:5	413:6, 23	104:24	384:14
22 287:5	377:12	576:20	106:2	385:14
377:8	605:5	579:10	130:8	386:3
413:3	FOERSTER	football	161:19	390:19
439:23	7:8	582:9	188:19	405:13, 16
450:15			189:6	407:12

408:23	552:23	524:13	263:14	558:3
409:16	553:7	534:15	272:5	582:4, 6
410:2	554:7	586:22	298:10	fourth
415:14	558:22	foundation	299:2	86:24
418:23	559:8	61:20 64:8,	303:11	147:19
421:18	569:17	23 76:9	314:12	289:22
422:4	573:13	78:19	315:1	FOX 3:12
431:22	584:15	79:24	324:13	fracture
434:7	585:1	84:10, 19	326:13	305:23
445:22	586:24	88:17	329:13	306:3
446:24	592:2	89:20 99:6	340:12	fractured
450:22	607:16	111:17	345:2	245:14, 22
452:12	614:6	114:18	346:11	305:6
459:8	620:22	117:24	347:12	318:7
463:11	622:13	118:13	361:7	511:11
466:16	626:4, 15	119:12	363:3	fractures
468:15	627:2	120:2	364:2	245:13
469:15	628:23	132:22	403:17	FRAGILE
470:21	632:3, 22	146:7	404:14	29:8
474:21	639:10	172:8	406:13	288:20
475:7	format 87:7	173:8, 14	450:22	295:1, 17, 21
476:8	formation	179:19	451:10	296:5, 8, 20
481:13	419:6	186:12	454:19	297:20
483:1, 19	421:20	188:7	475:7	298:4, 13, 19,
485:1, 22	formed	189:24	477:3	23 299:6, 20
490:3	614:19	194:7	478:24	fragment
495:5, 18	forth 445:5	196:22	481:13	606:22
497:3, 19	forward	198:12	485:1	framework
500:9	65:10	199:12	515:4	363:15
505:22	127:9	204:2	524:10	372:18
507:1	288:21	207:16	556:22	414:17
510:12, 19	588:20	208:6	557:21	436:1
511:18	found 63:8,	229:10	558:11	494:12
516:15	12 77:11	233:10	626:15	Franciscan
517:23	104:1	236:16	627:23	566:14
519:6	142:19	239:3, 19	632:3	frankly
520:16	144:14	241:17	633:21	255:22
522:10	160:18	248:22	foundations	fraternal
524:10	298:2	251:1	551:3	265:4
527:5	332:22	252:14, 20	four 56:17	266:24
528:5	437:14	253:18	119:22	fraud 71:9
531:16	468:10	254:7	160:20	frequency
533:12	473:3	255:7	232:20	298:3
550:22	484:5	261:23	358:12	

fresher 505:24	fundamentall y 198:2, 9	606:15	104:3, 12, 13, 18 105:18	200:2 253:15
friend 407:8	funded 551:2, 3, 4	< G >	106:5, 8, 9,	266:5
friends 130:21 330:16 447:23 484:18	558:19 563:16 564:1 634:11	GABA 518:8	13 246:15 248:4, 15	281:16 285:19
front 148:21 150:11 152:22 191:22 206:17 629:6	funder 556:11 616:8	GABAergic 518:2	249:6, 23 250:11, 22 256:11, 17,	325:20 326:11 430:1
full 147:18, 21 148:19 151:14 206:22 298:16	funders 373:23	gain 467:14	24 270:11, 16 272:2, 24	434:22 456:20 473:2
fun 305:17	funding 373:18 374:5 375:4 400:18 553:18 564:14 615:18, 23 634:9 635:4	Galveston 47:18 328:8, 10, 11, 16 331:10 390:13 411:17 432:22 433:4, 19 576:20 577:5 578:16, 19 579:10	273:2 282:11 290:12 291:7 295:5 301:12 320:13 343:11 353:15 438:5 440:13 490:20 493:19, 24 494:2, 7 497:9, 13, 21 498:10 499:1 522:21 523:9 524:7, 8, 15 526:7 527:14 538:9 540:14 542:23 608:17	528:11 547:12 generally 92:15 125:2 270:19 292:11 337:14 382:10 388:8 415:5 416:16 419:3 442:20 460:18, 20 467:6 492:16 529:11 607:19
function 82:23 309:12 355:21 356:23 377:22 520:13 521:3 522:7 533:18	funny 131:1	game 582:23		
functional 394:9 396:20, 21 397:13	Furnary 104:1	games 583:12 584:21		
functions 281:7	further 78:12 230:4 466:12 473:16 500:17 605:10 635:11	gamete 284:24 319:22		
fund 374:9, 15 377:2 388:8 550:19 552:13 558:4, 5	FUTURE 32:10 44:11 49:7, 9 123:5, 7 130:6 403:10 555:17 561:18 604:6, 8, 13	Gastgeb 174:5		
		gauge 472:10		
		Gaugler 258:14, 22 259:15 261:8		
		GAULGER 15:18		
		gears 411:10		
		GENE 29:21		
			gene- environment 378:10 General 7:24 61:22 96:24 128:12 146:18	generating 344:5 536:15 generation 292:4 GENES 15:7 111:12 171:10 251:7 262:10 264:20

266:11, 12, 13, 15, 16	277:7, 8	377:13	171:2	Gestational
268:3	280:6	403:21	243:22, 23	423:1, 14
269:20	283:11, 20	404:9	268:6	467:14
278:15, 18	284:7, 10, 19	405:2	283:4	473:2
280:4	285:4	406:7	316:11, 13	482:4, 7
282:15	291:19	409:21	318:23	getting
287:15	294:5, 11	418:9	372:11	128:7
288:1, 15	299:10	444:2	403:5	243:20
289:10	315:14	448:17	408:2	250:8
316:7	317:3, 6	449:22	450:2	Ghanizadeh
319:10, 14	318:1, 3, 4	457:23	524:18	515:23
322:3	319:1, 5, 24	504:19	537:2	Giants
340:18, 22	321:17	506:11	600:11	582:11, 14,
341:20	323:4, 6, 7,	509:12	607:2, 11, 13	15
344:20	10, 16 325:4,	519:1	608:3	Gibbs 40:18
345:9, 15	5, 23 326:18,	520:3	GENETICS_	GIFT 24:8
418:10	19, 24	524:12	OF_AUTIS	554:20
420:7, 12, 14,	327:12, 15	525:22	M 26:20	555:14
17 421:5	328:1, 19	526:11, 22	genome	gifts 554:4
492:8, 13	329:9, 16	527:24	390:2, 5	girl 327:1
493:7	330:4, 5, 19	543:1, 13, 17	420:5	GIRLS
519:23	331:11, 12	603:2	genomes	19:9 30:9
522:4	332:13, 14,	608:14, 15,	265:12	73:13
528:12	21 333:1, 2	24 609:11	genomic	618:24
540:12	334:1, 3	610:1, 4, 6	451:16	give 38:9,
607:5	335:13, 14	GENETIC_	gentleman	18 41:19
608:6, 23	336:5, 7	RISK_FOR_	59:7 83:6	67:5 74:1
genetic	339:7, 13, 20	AUTISM	97:11	87:13 93:8
49:17	340:9	15:19	359:9	102:7, 24
244:9	342:3	GENETIC_T	392:23	103:8
245:3	343:9	ESTING	gentleman's	110:7
246:21	346:6	22:18	173:7	115:20
248:3, 11	349:15	genetically	gentlemen	116:11
250:6, 10	351:7, 15, 20	244:22	104:11	152:9
252:17	352:10	265:19	235:15	158:22
254:2, 4, 23	355:20, 24	320:2	237:5	181:7
255:4	356:4, 7, 17,	362:21	Geode 558:5	184:4
257:19	20 358:21	364:17	gestation	189:4
259:16	361:2	609:5	312:11	191:21
262:13	362:9, 17	GENETICS	360:15	193:15
264:9, 10	368:3, 9, 16,	12:11	419:7	196:11
265:13, 20	22 370:24	15:10	420:9, 17	200:23
269:21	371:18	43:21	421:19	201:20
	372:2, 6	111:15	454:5	212:16, 17,

24 214:13	407:18	84:22 85:2	175:18, 23	274:5
217:21	627:11	86:13, 23	180:3, 23	276:21
224:1	636:6 639:8	92:23	182:8	278:10
238:24	gives	94:20	183:11	280:3
240:21	302:16	95:12, 23	184:10	288:21
258:10	406:2, 3	96:5, 9, 10	186:2	289:16
263:2	giving	98:4, 18	187:6	290:5
271:7	188:23	99:10	190:7	297:8
280:9	207:7	100:3, 12, 19	191:17	300:6
296:13	330:18	101:2	192:4	304:14
297:12	395:3, 15	103:13	194:13	306:22
308:11, 15	434:23	106:16	195:18	308:7
330:14	glass 395:11	108:6	201:10	310:12
331:14	glitch	112:5, 11, 23	203:22	316:23
335:17	277:21	113:6, 7, 22	205:13	317:14
340:14	global	114:23	206:14	323:11, 14
362:2	249:20	116:4	211:14, 16	332:11
375:16	477:19	117:2	214:18	341:10
379:22	globally	118:2, 21	215:20	344:7
381:24	429:7 430:6	121:14, 20	216:19	345:22
389:8	glutamate	122:7, 15, 21	217:9	347:24
392:10	518:8	123:8	218:20	355:10
394:24	519:1, 18, 20,	125:6, 9	219:12	358:19
395:1, 12	22 520:3	126:16, 22	220:24	359:24
408:20	glutamatergi	127:18	221:5, 16	360:1, 6
440:15	c 517:10, 14,	129:4	224:16	361:16
456:4	19 518:1	130:10, 15	227:6	369:20
480:12	520:12, 13	131:2	228:9	372:19
522:14	521:2, 3	134:14, 20	230:4, 12	373:5, 17
531:22	go 36:22	135:12	232:14	387:8
544:22	37:8 38:5	139:5, 8	233:18	388:19
554:22	39:9, 18	141:1	234:19	392:2, 21
628:9	40:23 42:8,	144:4	242:8	395:14
630:21	12 44:6, 22	145:24	243:18	396:8, 14
Given	46:6 52:1	146:10	245:10	398:6
75:22	54:7, 14	151:24	249:2	403:12
134:18	55:11, 23	153:21	251:10	404:18
152:7	57:24	156:2	257:14	405:18
154:24	59:14 65:1,	158:13	258:12, 20	410:18
161:11	21 72:15	162:24	259:7	414:6
177:3	75:19	163:11, 20	262:7	418:16
216:24	76:24 78:2	164:1	268:10, 17	419:5
259:12	79:6 80:7	170:8	270:14, 17,	422:10
293:10, 12	82:10	173:19	22 273:22	424:23

425:8	566:9	145:18	438:22	92:15 97:3
441:20	568:15	155:5	444:3	130:21
443:16	571:20, 21,	173:2, 6, 20	445:4	216:9
448:6	22, 23	176:13	448:10	278:8
449:12	574:11, 19	184:12	451:6	280:13
453:20, 24	575:9, 15	192:20	460:7	297:15
455:21	576:13	204:24	464:17	322:16
456:11	581:18	205:15	480:18	333:19
459:5	582:14	209:20, 24	481:2	339:24
463:13	583:1, 6	219:10	486:13	361:9
468:21, 23	585:9	220:3	496:21	381:17
473:12	586:14	231:14	500:19	407:7
475:12	587:3, 9	237:2	529:8	424:4
477:4	589:13	238:12	532:2	429:7
481:24	590:16	239:17	539:15	430:6
483:24	591:1	249:18	541:2	432:10
487:21	622:22	250:19	543:7	433:1
488:9, 14, 17	623:6 628:3	258:11	559:4	434:5
489:6	goal 386:1,	263:13, 18,	568:9	460:13
490:10, 12	14, 24 387:1,	19 274:15	575:23	464:9
491:10	18, 21	275:23	577:20	477:18
492:2, 23	394:10	280:19	578:7	486:16
496:23	397:14	295:22	579:22	490:13
498:20	goals	296:4	580:4, 13	492:23
499:21	386:18	305:9	583:15, 18	504:8
503:9	388:7	308:5	585:15, 23	541:16
504:22	goes 39:24	309:9	590:13	548:5, 8
505:2	108:4	321:21	592:11, 20	575:24
506:22	302:7	330:9, 24	602:18	588:13
523:19	625:24	331:7	608:16	593:12, 23
525:20	going 41:8,	335:8, 16	627:12	594:14
526:2	23 49:4	348:15	630:21	goodness
527:7, 10	65:10 74:6,	356:13		394:18
531:3, 8	23 77:20	360:1	GOLDBERG	592:2
533:6	87:9, 17	362:15	4:14 5:1	Google
534:1, 12	91:15 93:8	374:11	gold-	177:14
539:15	96:12	383:23	standard	557:12, 19
542:13	106:23	395:6	549:7	Gotcha
545:1	112:6	398:19	GOLKOW	570:15
547:9	116:5, 6, 13,	401:18	1:19 8:1, 7	gotten 447:7
556:6	16 121:19	417:10	34:6	government
557:2, 11	123:2	418:1	good 66:13,	348:19
559:12	132:21	424:10	14 67:8	374:6
563:8	134:1, 2	432:18	75:16	388:8

551:4	Gray 1:15	401:16	guys 67:21	572:18
552:10	34:21	436:23	130:17	581:10, 11
	636:12	511:4	149:7	583:8, 10
government's	Great 36:19	547:22	247:11	584:1
388:15	67:22	558:4	328:11	halfway
grab 587:6	76:23	621:14	394:19, 20	268:10
graduate	131:23	groups	GW 562:1,	460:11
192:14	134:4	548:5	3	Hallmayer
Grams	296:1	grow 127:1		260:7, 10, 13,
455:19	347:9	growing	< H >	18, 21 261:2,
458:8	410:16	39:21	H.PDF	12 267:7
GRAMS-	427:1	49:11	31:15	Hampton
PMC.PDF	463:22	80:16 81:6	HAAS 7:8	565:2
27:18	591:6	224:19	hack 70:19,	hand
Grand 3:9	greater	growth	23	328:24
grant 349:9	229:1	310:13, 24	Hagerman	335:20
374:14	326:10	311:5, 8	41:3	430:18, 20
375:4	450:19	312:5	HAIGHT	585:15
378:15	451:6	423:13	7:14	handwriting
390:15	454:16	538:2	HAILEY	297:6
391:6, 13, 14,	greatly	GSK	2:4	Hang 93:7
15, 16, 20	67:13	563:14, 15	HAIN	95:8 100:7
400:17	Grether	guaranteed	25:20, 23	101:20
438:23	227:22	231:9	61:4, 7	128:2, 6
562:24	GRODBER	GUERRA	411:13	139:11
563:4	G 14:12	2:1	HAIN.PDF	154:16
634:24	GROSS	guess	24:21	159:5
granted	11:18	238:12	hair 379:6	177:24
380:5	13:15	419:23	380:14	181:6
grants	23:12	573:9	382:2	206:16
348:18	52:13, 15	574:4, 6	384:7	207:15
349:11	56:4, 19	624:3	386:15	344:16
373:13	57:4	guide	398:8, 12	504:6
374:8	109:22	534:17	441:16	554:16
378:16	274:6	GUIDES-	461:10	haploinsuffic
382:17	grounds	CHPT	HAIR-	ieny
438:23	84:18	17:11	BASED	302:15
439:4	404:12	guiding	23:16	305:2 308:2
558:19	GROUP	461:19	379:19	happen
635:1	25:20, 23	guilty 74:7	380:6	221:2 248:2
graphic	94:9	guy 441:14	Hala 436:23	happened
493:16	347:16	447:15	half 43:20	133:20
	361:1	525:6	261:14, 20	137:6, 14
	362:8		262:13	140:7, 18

142:8	159:7	head 147:1	HEALTHX.5	helpful
150:19	184:13	179:1	60 30:22	60:21 357:6
202:2	191:22	209:11	hear 455:8	helping
204:21	206:17	211:13	625:10	59:24
211:21	207:18	280:12	heard	580:13
219:24	364:24	287:7	175:15	helps 541:1
250:11	392:11	396:24	243:7, 9, 11	hemoglobin
264:20	481:24	397:4	255:20	399:6
424:24	547:6	416:1	266:6	Henry 8:1
428:24	harmful	459:4	337:13, 18	Herbert
577:11, 13, 24	81:3 598:14	587:20, 24	389:23	96:15, 20, 22
happens	Harony-	headlines	410:11, 13	heritability
271:7	Nicolas	596:7	450:3	239:23
327:8	436:24	Health 6:13	464:12	257:18
434:15	Harvard	13:18 24:8	571:10	258:9
440:3	65:24	26:16 75:6	607:11	260:1, 19, 24
461:16	66:18 67:4	78:10	hearing	261:3
575:6	68:4 71:13	79:14, 18	313:1	272:7
583:24	86:14	80:12	heart	273:11
happy	87:20 89:5, 13 488:4, 10, 15, 17	81:10, 11, 20	399:10, 13, 20 445:1	274:14
195:13	490:16	82:14 83:7	hearts 445:2	275:22
205:13, 17	593:23	89:13	heavy 48:6, 11 61:11	276:7
254:11	594:3	97:12	329:2, 4	284:18
401:3	596:1	101:12	413:6	315:13
447:20	597:21	375:3	487:18	607:18
522:15	598:16, 24	376:6, 11, 15	heightened	heritable
524:20	617:2	377:10	191:3	267:10
575:11	HARVARD-	378:8	held 1:13	269:10, 21
590:7, 18	20100500-	389:6	34:11	270:8
hard 38:10	EARLY	398:21	585:13	271:14
43:8 102:8	29:20	464:7	hell 70:11	316:10, 15
252:23	HARVARD-	481:11	he'll 304:12	317:5, 10, 11
281:14	20211029-IS	482:8	395:18	318:20, 21
397:20	30:20	500:24	help 149:12	319:1, 4, 16
414:21	Harvard-	534:11, 12	212:6	339:22
430:22	affiliated	555:16	310:6	340:3
482:12	88:14	566:15	369:16	354:14
495:23	Hayes	595:24	383:24	366:19
522:12	566:19	598:11	502:5	449:22
hardcopy	HEACOX	621:19	613:15	Hertz-
41:20 93:8	2:19	healthcare	614:16	Picciotto
95:10		426:1		114:7
115:12		Health's		158:7
		393:7		205:20

206:12	465:13, 23	408:18	445:3	581:10, 12
241:7	482:16	507:24	486:23	583:8, 10
242:24	509:9	hiring	487:3	584:1
243:10, 14	510:7 527:1	615:12	HOLWELL	hours 582:4,
244:1	highest	HISTORY	4:14 5:1	6, 7 624:5, 7
Hertz-	56:5, 11	24:11	home	628:11, 13
Picciotto's	77:11	354:1	278:11	629:24
206:2	125:17	556:7	homozygous	630:6
	Highlight	602:19	438:6	household
heterogeneity	54:22	hit 341:23	Honestly	265:8
244:24	159:1	Hmmm	485:23	houses
	268:18	425:8	hope	36:11
heterogenous	highlighted	Hoffmann-	345:24	Houston
244:20	80:8	La 563:3	468:9	2:21, 22
hey 463:16	148:13, 20	564:12, 17	hoping	3:17 328:3,
507:14	395:8	hold 56:5,	300:15	7, 8
554:21	highlighting	11 65:18	Hopkins	how's
hide 559:17	185:7	115:1	66:5, 17	204:23
high 126:10,	highlights	125:16	67:4 68:5	HUDDLEST
11 247:15	428:16	126:10	71:14 77:1,	ON 27:7
264:24	606:20	154:20	9 78:10	256:22
399:19	highly 79:2	158:16, 21,	566:20, 24	336:13
423:1	282:10	22 180:1	617:3	huge
435:21	285:6	193:10	HOPKINS-	242:17
458:10	490:8 623:3	219:5	20191105	375:23
465:12	high-	290:24	30:11	Hugh 98:19
466:13	resolution	297:13, 23	hormone	huh 409:24
467:10, 20,	292:16	416:3	310:16	488:12
21	high-risk	426:7	436:4	HUMAN
high-	420:7	433:5	hormones	15:10 81:5
definition	hilarious	449:11	535:19	103:18
74:8	131:4	455:22	horse 62:6	268:5
higher	Hill 411:24	456:7	HOSPITAL	359:22
127:4	413:5	460:5 589:7	19:12	375:3
157:17	414:8, 12, 16	holding	88:15 89:6	376:6, 16
292:5	Hills 7:4	126:9	97:1	377:10
298:6, 23	hire 391:21	holes 439:24	551:19	378:9
370:19, 21	hired 58:5,	HOLLANDE	552:4, 14	418:11, 20
431:16, 17	8 83:21	R 27:21	HOSPITAL-	421:16
435:13	86:3	41:3 52:12	OPENPAYM	440:19
443:14	273:23	123:14, 15,	ENTS_RESI	441:5
451:20	404:5	19 124:8, 12	ZE 27:10	524:18
457:7	407:19	126:10, 17	hour	540:20
459:5		288:23	572:18	544:13, 17

545:6	hypothesis	477:20	633:7, 23	223:12
546:3, 5	46:17	512:9	634:6	227:24
597:16	221:13	hypoxic-	ideally	235:4
humans	344:4	ischemic	339:6	240:16
309:3	363:5, 9	567:7	ideas 433:24	258:17
419:8, 16	487:12		identical	263:5
438:14, 17	536:15	< I >	264:5	267:23
440:24	545:23	i.e 285:5, 7	266:23	277:24
493:3	604:12	Icahn 75:6	277:3	280:4
540:23	hypothesis-	99:3	314:9, 22	282:21
543:16	generating	396:22	404:9	289:18
544:8, 12	342:9	619:4, 10, 24		294:1
546:9		620:19	identification	296:16
humble	hypothesized	621:4	35:22	301:6
126:4	225:1	ICD 195:2	37:10, 24	306:8
humerus	hypothetical	ICD-A	41:12, 17	308:20
511:11	46:21	22:22	54:10	321:4
humor	245:16	Id 216:20	72:20 77:3	332:5
130:24	254:8	217:2, 6, 15	79:9 86:16	333:14
hundreds	270:21	234:4	93:2 94:23	336:16
171:10	282:8	356:14, 15	101:5	341:14
286:13, 17	295:23	360:17	106:19	342:16
287:1	320:4	idea 111:6	107:19	349:5
344:20	361:10	166:6	109:13	352:2
345:9, 15	377:7	182:22	114:3	353:4
HUNT 4:4	386:5	213:7	122:10	357:11
hwatts@watt	399:23	214:21	127:21	359:14
sguerra.com	471:1	251:18	129:20	361:19
2:10	472:23	342:9	132:1	364:10
	514:3	347:8	136:9	369:23
hybridization	516:18	354:10	147:13	374:23
292:21	521:13, 15	361:9	170:11	379:14
	625:18	387:4	172:20	388:21
hyperactivity	hypotheticall	413:12	176:3	391:8
82:21 369:8	y 245:7	432:10	181:2	392:4
hyperflexibili	341:3	433:1	183:14	394:5
ty 305:21	468:17, 19	434:5	187:9	401:8
	477:10, 21	436:1	190:10	411:6
hypertension	517:9, 11	438:12	192:7	417:7
473:2	hypoxia	451:18	193:2	425:20
hypotheses	478:1, 6	474:8	194:16	429:14
354:3	hypoxia-	527:13	195:23	433:15
487:17	related	559:13	218:24	436:13
		632:15	220:7	439:12

454:23	identify	Illinois 4:9	impacts	347:10
488:6	103:20	59:8	385:4, 5	376:22
501:22	111:8	ILLNESS	impaired	420:2
503:22	134:21	14:10	82:22	important
525:3	276:16	18:19	impairing	65:9 111:3,
530:19	325:5	289:22	281:6	8 190:17
534:7	327:12	359:19	IMPAIRME	266:13
539:10	368:8	illustrating	NT 16:8	290:9
540:1	400:6	372:10	183:17	301:22
541:20	502:5	imagination	185:14, 19	342:8
542:16	542:22	548:2	imperative	354:23
546:17	555:15	imagine	637:14	378:2, 12
551:14	557:10	90:7 226:13	impetus	383:18
553:12	578:18	imbalance	576:18, 22	387:7
554:14	607:6	517:19	impinged	388:9
555:5, 8, 11	608:10, 11	Imbruvica	343:13	401:16
568:19, 22	identifying	556:3, 19		406:19, 20
580:18	278:5	immediate	implemented	427:24
612:12	281:22	172:12	500:4	432:2
617:20	322:13	immigrant	implicated	437:17
IDENTIFIC	402:8	555:20	356:18, 21	444:1
ATION_AN	524:6 592:6	immune	358:22	462:2
D 12:7	idiopathic	517:11	359:7	464:24
identified	228:16	IMPACT	459:14	465:3
181:17	229:4	14:19	519:21	512:17
188:1	256:12, 15	23:20	implicates	535:4
244:13	272:20	161:1	111:2	545:21
256:17, 24	421:4	165:23	implication	596:19
271:1	IGF-1	166:12	403:20	597:14
272:13	310:13	167:1, 13	implications	604:13
280:11	311:14, 19,	178:13	355:4	609:10
286:23	21, 23 312:8,	185:14	imply	616:1
287:5	9, 13, 17, 23	375:15	145:10	importantly
294:6	313:4, 10	376:20	424:13	143:10
319:10	ignore	472:18	implying	impossible
320:15	627:12	500:21	53:19	229:12
332:21	III 2:14	513:21	232:24	586:2
347:4	108:10	521:3	407:24	improper
440:17	127:15	537:19	432:4	190:1
608:7	139:17	545:12	445:24	320:4
	IL-6 472:17	611:24	446:2, 5	585:24
IDENTIFIES	illegal 559:5	impactful	importance	591:17
31:13	illicit 500:3	210:24	75:24	improved
101:12			210:13	139:23

140:16, 22	include	360:8	111:1, 10, 13,	361:3
291:8	53:12 67:1	372:15	19 112:14	362:9, 19
502:2	136:1	384:19	113:1, 10, 23	440:4
549:10, 22	209:20	385:1	114:13	443:7, 19
	236:19	400:19	119:10	469:12
improvement	240:3	404:12	120:18	471:2
139:4	271:24	422:21	121:1, 9	472:15
improvement	294:14	430:9	133:2, 7	512:6, 9, 12,
s 138:7, 17	303:4	436:23	135:13	22 612:19
221:14	359:1	439:5	136:19, 20	613:7
improving	362:11	485:7, 8	144:23	630:10, 13,
320:20	373:24	500:23	146:19	15, 20 631:6
388:9	458:2	528:23	159:14	INCREASE
IN_AUTISM	503:4, 16	538:22	160:24	D 29:7
_CLIP_2.MP	621:3	555:19	161:6	78:16
4 22:19	included	556:2, 18	165:15, 20	82:20
inaccurate	52:18	inclusion	167:18	108:16
142:21	65:10 83:2	100:20	168:18, 22	109:2, 8
inappropriate	123:2	inclusive	169:8, 19	110:4, 20
e 255:24	166:9	55:18, 20	170:2	131:12
330:20	219:17	incomplete	171:1	132:12
inappropriat	236:4	230:24	182:24	166:19
ely 602:8	339:18	245:16	203:15	167:21
inarguable	350:16	254:8	206:10	170:22
110:18	372:14	399:23	207:14, 24	191:5
166:10	569:14		208:1, 2, 10,	203:8
inbox	570:13, 20	inconsistency	17, 19	230:16
570:10	605:16, 19	606:3	210:19, 20	242:12
INC.PDF	includes	inconsistent	211:1	297:19
25:20, 23	54:15	130:8, 13	221:10, 20	298:2
inches	82:17	333:6	224:6, 23	399:20
177:8	208:11	432:14	226:10	400:3
504:13	220:14	443:15	232:18	442:6, 17
incidence	310:10	incorrect	233:2, 7	444:6
109:3, 17	368:3, 15	53:23	234:1	451:15
111:2	545:8	408:4	235:17	458:21
117:7, 9	612:22	515:15	236:11, 12	459:16
119:16	INCLUDIN	incorrectly	238:1, 3, 6, 9,	464:20
121:2, 9	G 30:16	153:9, 20	10, 11, 22	470:13, 18
135:23	79:13, 17	155:13	240:8	473:4
160:20	80:11 83:6	164:22	241:12	475:4
224:23	84:18	increase	242:14, 23	477:22
225:6 238:4	191:8	108:24	243:2, 21	511:15, 22
	307:4	110:23	272:1	521:20

522:21	indication	infant	inflates	258:1
523:10	311:23	377:16	133:12	261:21
545:8	536:24	infants	160:4	262:17
603:2	605:9	500:1	INFLUENC	267:14
609:17	individual	infected	E 26:16	268:23
630:2	251:5, 8	279:4	301:18	269:8, 18
increases	283:21	infection	340:18	270:4
45:17	284:5, 11	279:6	389:5	280:5
46:16	342:5	468:24	492:6, 12	281:3, 10, 19
160:18	572:20	469:3, 4, 8, 9	611:12	284:8, 20
161:3, 7	605:7	470:12, 16	influenced	285:5
209:4	INDIVIDUA	471:2, 12	340:22	296:6, 22
237:6	LS 15:15	infection/feve	341:20	315:9, 15
304:4	56:20	r 470:6	378:11	316:3, 9, 17
355:19	127:6	infections	613:14	317:13, 22,
448:17	164:13, 15,	278:23	616:8	24 353:24
471:7	23 211:22	279:1	inform	450:1
476:15	266:8	360:15	327:8	inhibit
487:11	278:16	423:4	542:2, 4	300:16
501:15	283:16, 18	454:6	information	inhibitor
515:20	371:1	469:11, 23	79:1 88:11	529:23
605:2	372:23	infectious	95:3 243:7	inhibitors
increasing	502:7	359:4	265:14, 20	530:7
46:22	571:5, 13	469:11	283:15	inhibitory
120:6, 7	individual's	infer 409:20	379:7	420:11
129:9	491:16	infertility	381:6	440:8
135:23	induce	353:18	505:11	517:18
161:23	301:14	infinite	507:4, 5	initial 52:5
170:17	induced	378:1	508:4, 10, 12	415:17
179:8	314:10, 22		509:7	437:22
353:17	474:18	inflammation	INFORMAT	Injurious
385:22	induction	307:5	ION_MOUN	499:9
INDEX	514:19, 24	377:20	T 26:12	Inkjet 74:9
33:2 423:2	industries	466:14, 20,	informed	INNOVATI
India 195:4	551:18	23 467:1, 3,	625:15	ON 25:12
INDIA.PDF	industry	8, 11 468:2,	ingesting	556:12
22:23	551:5	12 469:4	413:22	inquiry
indicate	553:17	inflammation	ingestion	409:12
186:4	554:2	s 307:5	48:7	insertion
400:3	556:13	inflammator	Inheritance	252:8
414:12	industry's	y 279:5	268:19	254:24
indicated	556:17	512:11, 16,	inherited	inside 494:1
94:1, 4	inequities	21 513:8, 20	251:6	497:14
188:1	555:16	545:10	257:22	

instance 340:14	integrity 437:19	304:1 375:11	intersection 526:11, 22 527:24	investigating 315:3 623:8
Institute 244:2 376:6, 11, 15 377:10 378:8 389:12, 16, 17 393:7	intellectual 231:4 303:4 311:1, 6 356:16, 18 358:16, 22 359:21	376:1 377:11 378:9 400:13 495:3 579:16	interval 179:13	investigation 341:22 614:24
institutes 375:24	452:23 453:4 454:8	interesting 265:17 305:12 421:15 487:17 568:2	intervention 203:14 526:14 528:3	investigator 400:18
institutions 593:17, 18 594:4 617:2	482:21 483:4	Interestedly 421:16	Interview-Revised 138:11 139:23 549:22	invited 52:15
instruct 330:24 583:19	intent 354:8, 24 406:16	interface 525:22	intrauterine 310:24 311:5 474:23 501:9 513:11	involve 61:9 343:7 567:5
instruction 566:5 586:1 591:14	intention 222:2 262:23	interfere 535:18	intricate 393:22	involved 83:4 103:21 350:23 388:17 507:12 563:17 567:6 576:16 602:12
INSTRUCTI ONS 637:1	interact 269:19	interfering 355:20	introduction 129:5 170:15	involves 345:9
insufficiency 313:10	interacting 251:6 280:18 282:1 286:4 491:14	interject 330:10	introductions 223:23	involving 171:9 345:15 522:6 537:6, 9 569:7 570:1
insulin 310:18 545:9	interaction 282:14 368:5, 17 372:10	International 195:1	introductory 579:17	iPSCs 309:4
insulin-like 310:13	interactions 171:10 343:7 344:21 345:10, 16 378:10	interpreted 428:1	investigate 85:16 185:13 296:10 378:23 614:15	ipsi 247:3
insulin-resistant 465:24	Interacts 345:11	interrogate 555:15	investigated 167:24 169:2 441:23 453:10 510:14, 21	irrelevant 405:22 493:13
insult 335:21 415:17, 20	interest 436:22 616:2	interrupt 384:24 514:18, 23		irrespective 465:24
insults 49:14	interested 303:13	interrupting 254:23		IRS2 525:11 526:4
intake 82:19, 24 426:2		intersecting 346:5		Irva 241:6
integration 109:22				island 509:5 isolate 630:8

isolated 432:1 433:9 465:16 522:13 Israel 425:24 488:20 489:1, 6, 10, 12, 19 issue 57:23 58:1 125:11 133:18 152:13 156:11 168:1 169:3 190:24 200:24 268:6 327:2 339:10 356:7 491:11 504:20 597:13 631:8 issues 142:13 143:12, 22 146:17 198:23 313:2 341:18 547:14 item 631:6 items 570:14, 21 iterations 141:7, 10 142:4	iterative 507:6 536:22 iteratively 611:3 Itkin 484:19 ITS 28:20 91:6, 20 94:3 159:21 274:19 306:14 382:6 513:10 559:17 Ivy 67:24 < J > J&J 24:14 J.J 4:6 J.M 524:1 Jaguar 561:6, 7 JAMA 178:16 Janecka 393:21 394:8 396:19 JANINE 25:14 524:2 525:15 JANSSEN 27:9 551:18 552:19 553:5 January 73:10 158:7 581:5, 11, 20 JANUSH	3:3 Jason 8:12 Jennifer 455:16 JERRY 2:7 Jets 582:11 JH 22:7 JJ.snidow@k ellerpostman .com 4:11 JJCI 5:14, 22 jlara@stoned eanlaw.com 7:5 job 149:20 188:19 Joe 370:10 JOHN 2:6 19:12 JOHNS 30:11 66:5, 17 67:4 68:5 71:13 77:1, 9 78:10 566:19, 23 617:2 Johnson 5:14, 21 12:7 341:6 374:4, 5 553:23, 24 554:3, 4 556:2, 18 557:14 558:3 560:8 Johnson's 556:2, 18 jokes 68:1 JOSEPH 5:10 7:3 14:12 397:2, 9	joseph.carus o@skadden.c om 5:13 JOURNAL 10:16, 20 11:9 15:10 187:16 218:14 220:11 268:5 486:3 journals 508:6 joust 130:21 145:24 joy 567:16 Judge 1:6 66:11 89:1 348:14 589:24 591:15 627:14 judiciously 627:10 Julia 128:5, 9, 11 461:16 July 37:18 39:3 40:3, 7 JUNE 10:22 183:20 392:14 411:12 junior 461:22 jury 53:7 104:11 215:1 235:15 237:5 251:15 369:2 432:21 434:4	jwhite@watt sguerra.com 2:11 < K > Kalra 194:18 Kanner 108:14 Kansas 3:10 Kapra 56:14, 16 366:8 452:7 Karlstad 619:9 karyotyping 292:14, 17 Kathryn 87:20 KATIE 7:14 KATZ 23:8 128:1, 5, 9 134:15 368:12 459:22 460:6 464:18 465:21 472:14 473:1, 19 513:6, 7 514:7 545:1 Katz/Kolevzo n 460:2 502:16 Katz's 473:8 Keane 233:15, 23 234:9, 13 235:7 236:7 keep 49:4 91:15 192:20 249:19
---	---	---	---	--

263:18	208:22	know 39:6	206:11	407:1
296:4	229:19	50:11 55:4,	230:19	409:6
348:15	281:4	21 56:16, 21	233:5	410:8
356:13	292:4	57:8 58:10	234:17	419:2, 10, 20,
360:1	301:21	62:18, 20	238:13, 21	21, 22
464:17	325:24	63:15, 24	247:2	420:20, 21
500:18	389:22	64:2, 10, 17	252:22	421:22
keeps 96:12	396:8	67:10, 20	255:9, 18, 24	422:6
KELLER	400:24	69:10, 15, 16	256:10	435:11
4:1 633:11	417:11	71:9 74:1	257:7	438:3, 11
Key 51:6	439:19	76:19 78:5	262:11	445:17
367:12	440:3	79:5 80:22	268:12, 13	453:19
401:19	461:6, 10, 17	81:23	271:2, 19	457:12, 14,
420:14	464:13	87:19	272:21, 23	15 458:23
keyword	478:10, 13	88:19 89:4	273:3	462:1
51:3	482:12	91:24 92:5	278:19, 22,	464:14, 15,
Khachadouri	490:11	96:14 97:5,	24 279:13	16 467:12,
an 369:10	494:12	7, 14, 17, 21	280:15	16 471:6, 8
370:4, 5	502:11	98:6, 13, 20,	285:21	476:4
392:24	540:11	21 99:1, 4	295:19	477:17
kid 316:20	596:20	102:22	301:21	483:13, 15
336:6	605:21	103:3	304:7	492:13
440:10	608:1 611:3	112:8	306:20	517:5
kidding	kinds	113:2	313:14, 20,	518:10
130:15	308:24	114:6, 8, 11,	21 314:7, 8,	524:3
263:19	318:7	19 119:15	13, 20	527:9
kids 212:21	320:13	126:7	315:23	532:2
300:21	430:8	138:13	317:7	540:14
301:24	540:21	148:14	323:24	548:16, 24
309:20	KING 4:7	150:18	325:17, 19,	552:11
319:4	6:3	152:9	23 332:12	553:3, 8
323:3	Kingston	153:22	334:6, 9, 14	559:6
325:4	1:14 34:12	156:7	340:2	560:15
440:11	36:6, 10	175:6, 13	358:4	563:20
458:2	567:17	177:6, 9, 17	376:4	564:10
608:16	KINSMAN	180:22	379:1	565:17
killed	3:8	182:4	387:20	569:15, 19
582:20	Kirsten	183:24	388:4	571:7, 8
Kim 235:9	235:10	188:22	391:16	573:7, 8, 15,
kind 52:4	knew	192:21	396:6	22 574:20
106:24	125:23	197:5, 6, 11,	399:5	582:15
141:16	176:12	21, 24	402:12, 13,	584:16
169:14	knockout	204:22, 24	17 404:6	585:17
191:2	538:11, 23	205:8, 14	405:8, 12, 20	587:22

589:2		79:10	289:19	542:17, 19
590:23	KOLEVZON	86:17 93:3	294:2, 4	546:18
593:18	1:13 9:3,	94:24	296:17	551:15
594:9	17, 18 10:6,	101:6	301:7, 9	553:13
608:22	7, 10, 14, 17	106:20	306:9	554:15
609:18	11:6, 11, 17	107:20	308:21, 23	555:6, 9, 12
621:11	12:6, 8, 13,	109:14	321:5	568:20, 23
622:14	17 13:6, 11,	114:4	332:6	569:2, 3
623:23	15 14:6, 9,	122:11	333:15	571:1
624:1	11, 12, 18	125:15, 19,	336:17	580:19
626:21	15:6, 7, 11,	20, 21	341:15	593:10
631:18, 20	16 16:6, 10,	127:22	342:17	594:16
632:5, 8, 12	13, 14, 18	129:21	349:6	601:4
knowing	17:6, 10, 12,	132:2	352:3	612:12
554:9	14, 16, 21	136:10	353:5	616:13, 23
knowledge	18:6, 8, 13,	147:14	357:12	617:21
78:24	16 19:6, 11,	152:18	359:15	636:8
175:17	14, 17, 19, 21	170:12	361:20	639:16
248:8	20:6, 8, 16,	172:21	364:11	KOLEVZON
332:19	18 21:6, 9,	173:12	369:24	,COMORBI
480:23	12, 15, 18	176:4	374:24	DITIES
530:4	22:6, 13, 15,	181:3	379:15	26:7
599:19	20 23:6, 8,	183:15	388:22	KOLEVZON
608:21	12, 15, 19	187:10	391:9	.PDF 9:18,
626:17	24:6, 9, 13,	190:11	392:5	22 14:17
known	16, 18, 20	192:8	394:6	KOLEVZON
36:16, 21	25:6, 10, 12,	193:3	401:9, 14	_000001-108
65:24	17, 20 26:6,	194:17	411:7	25:8
80:14	9, 14, 17, 20,	195:24	417:8	KOLEVZON
104:4, 20	23 27:6, 7,	199:7	425:21	-DANIELS
287:15, 24	12, 15, 18	200:20	429:15	21:7
288:14	28:6, 9, 12,	216:3	433:16	
289:9	14, 16 29:6,	217:22	436:14, 20	KOLEVZON'
295:10, 16	12, 13, 17, 18	219:1	439:13, 15	S 28:15
320:22	30:6, 9, 15,	220:8	454:24	610:10
385:21	19 31:6, 9,	223:13	488:7	KRAUSE
488:4	10, 16, 18	228:1	501:23	3:8
509:20	32:6, 9, 11	235:5	503:23	Kristen
551:8	34:17 35:2,	240:17	525:4	235:10
600:10	10, 23 37:11	258:18	530:20	Kristensen
knows 146:3	38:1 41:13,	263:6, 8, 15	534:8	98:24 99:1
KO 6:16	18 51:15	267:24	539:11, 13	571:2, 9
KOHANE	54:11	278:1	540:2, 4	Kroger 7:6
6:9	72:21 77:4	282:22	541:21, 23	

ktrinh@hbbl	111:17	454:19	larger	59:21
aw.com 7:17	114:18	475:7	219:16	67:11
kudos	118:13	477:3	290:24	137:5
308:12	119:12	478:24	502:12	211:15
	146:7	481:13	large-scale	214:7
< L >	172:8	485:1	473:23	222:4, 7
lab 81:2	173:14	515:4	largest	552:16
396:21	189:24	524:10	556:10	576:19
397:13	194:7	556:22	LaSalle	577:4
label	198:12	558:11	170:8	LAWRENC
120:10	199:12	626:15	344:8, 23	E 3:15
625:23	204:2	633:21	345:1	lawsuit
626:17, 22	208:6	lactation	523:21	47:6, 10
627:9, 12	229:10	436:6	524:1, 2, 24	632:14, 20
labeled	233:10	ladies	525:16	lawyer 59:8,
160:21	236:16	104:10	LaSalle's	22 63:14
labels	239:3, 19	235:15	524:3	84:15
627:15	241:17	237:4	laser 74:8	408:11
Labs 562:10	248:21	lake 36:11,	lasting	446:21
lack 374:12	251:1	13, 14, 15	481:10	496:17
557:21	252:14, 19	Lan 563:18	482:7	557:16
lacking	253:18	LANDMAR	lastly	565:18
76:8	254:7	K 24:8	129:17	576:9
117:24	255:7		late 47:10	578:15
120:2	261:23	LANGUAGE	Latin	lawyer-
132:21	272:5	19:8 30:9	247:15	created
173:8	299:2	73:13	laudatory	132:23
179:19	303:11	75:24	386:23	lawyers
186:12	314:24	618:24	387:1, 18	330:1
188:7	324:12	LANIER	388:7	407:9, 19
196:22	326:13	2:17 3:1	laugh 126:7,	486:20
207:16	329:13	633:14	8	505:17
263:13	340:12	LARA 7:3	laughed	614:10, 17
298:10	345:2	large 81:4	488:18	615:4
314:12	346:11	160:18	launch	631:10
627:23	347:12	259:24	493:23	632:18
632:3	361:6	302:23	497:9, 13	633:8
Lacks	363:3	393:11	laundering	LAWYER'S
61:19 64:8,	364:2	420:4	559:6, 14, 24	640:1
23 78:19	403:17	largely	560:2	lay 406:17
79:24	404:13	161:1	Laura	layperson
84:10, 19	406:12	418:10	379:18	364:16
88:17	450:22	606:24	LAW 2:12,	layperson's
89:20 99:6	451:9	607:3	17 3:8	245:19

Lbosso@ksla	leave 171:1	Lets 435:3	lifetimes	372:1
w.com 6:6	464:9	441:20	389:6	391:1, 2
LBW	Lecouteur	496:23	LIFETIMES	482:3
456:14	138:23	letter 615:8,	_MOUNT	559:20
lcain@mofo.	led 169:19	9	26:17	595:14
com 7:11	182:24	level 249:20	lifted 397:21	627:22
lead 69:2, 6	222:7	347:6	ligase	638:4 640:2
141:17	226:9	363:19	313:16	lineages
174:18	241:9	367:2	light 322:24	420:11
175:10	427:3	381:12	439:24	lines 108:10
347:14	569:12	448:15	440:1, 7	139:19
384:2	613:6	481:8 527:2	likelihood	333:17
462:9	LEE 6:17	LEVELS	329:2 502:3	352:6
466:14	left 358:20	21:20	Lilly 563:23,	371:17
467:10	388:3	380:13	24	372:5
469:4	530:24	381:5, 10	limit 76:2	377:8
475:19, 21	557:3	398:13, 14,	619:22	386:21
477:19	558:2	24 431:13,	limitation	418:7
504:3	568:16	16, 17	497:2	433:13
528:22	569:22	432:23	limitations	472:1
533:18	left-hand	435:13, 21	147:22	513:5
600:13	429:2	525:11	151:10	519:11
603:19	leg 245:14,	526:10, 21	608:19	520:22
leading	23 246:9	527:20, 23	limited 91:7,	612:15
244:2	248:16	Levy 40:2	21 473:17	LINK
514:20	295:18, 24	Lexington	limiting	28:20
515:1	305:4, 5, 7, 9,	4:16 5:5	230:9	78:14
536:11	10, 12, 13	LGBTQ	473:17	176:22
556:11, 17	308:3, 5	555:21	LINDSEY	306:15
596:11	318:8	LIABILITY	7:8	391:21
leads	Legal 8:10	1:4 34:15	LINE 33:6,	linkage
362:24	34:5	liar 321:21	9, 10, 13	290:21
364:19	legislatively	410:15	55:7 68:2	LINKED
475:3	551:8	LIBRARY.P	76:8	12:18
League 68:1	legitimate	DF 20:23	147:19	82:18
learn 377:3	157:24	lick 622:23,	189:9	373:2 400:2
learned	408:19	24	278:3	linking
536:23	409:1	Liew 80:22	279:14	44:10
LEARNING	length 147:8	81:1, 8, 19,	322:11	422:16
13:21	Leo 108:13	23 98:19	355:14	424:18, 21
257:13	leptin	Liew's	362:21	425:2 604:4
493:1	545:11	80:23 81:15	364:8	LINKS
534:4, 17		lifestyle	365:5	31:20
		428:3	371:21	392:16

lion's	18 424:6	613:19	16 6:3, 9, 16	224:2
319:15	516:3	614:15	7:1, 8, 14, 18	228:8
lipid 311:11,	534:24	615:14	load 84:5	258:4
13	565:7	617:10	location	265:11
LIST 13:19	585:18	620:14	36:5 469:8	273:17, 22,
37:4 39:14	621:3, 20	621:6	long 123:18	24 288:3
50:11, 12	Listen	623:19	153:24	290:19
55:1, 18, 20	328:12	LITIGATION	159:9	291:7
64:4 65:22	listening	N 1:4, 19	187:21	304:9
99:13, 17, 22	441:11	8:9 34:6,	373:8	306:4
182:5	lists 100:13	15 407:1	532:8	334:7
234:21	307:3	408:12, 14	540:10	342:11
235:1	343:12	446:22	longer	345:1
287:6	424:12	537:6, 8	160:8	353:13
414:18	literature	614:4, 12, 19,	450:18	357:17
422:19	85:15, 17	20 615:5	longitudinal	366:20
531:5	144:21	622:11	81:5 83:1	370:15
534:3, 13, 14	145:14	631:10, 12,	long-lasting	373:7
553:23	157:18	15 632:1, 18,	498:24	374:20
554:1	273:18	19 633:8	long-term	375:10, 17
558:7	350:19	634:14	94:4	382:3
585:11	382:14	litigations	437:10	384:9
590:9	404:24	564:20	490:20	389:9
592:14	408:5	little 43:7, 8	492:6	392:10
listed 40:18	414:11	58:1 61:14	look 74:2	394:2, 17
41:4 42:16,	447:3	102:8	77:22	395:2, 4, 18,
21 44:1, 17	465:11	108:22	81:15 84:7	21 411:22
45:23 46:2	471:19	327:1	87:6 100:9	412:2
47:1 50:9	480:23	329:10	102:4	416:6
51:15, 18	506:4	402:21	115:2	417:22
53:11 56:1,	508:5	437:4	116:10	426:12
18 58:3	515:11, 13	439:22	117:18	438:20
61:16 63:3,	524:13	449:13	139:12	445:19
16 64:18	529:3	450:13	141:9	449:3
67:15	538:16, 19	550:18	152:3	459:1
69:14	579:19	607:10	154:8, 9	463:6
83:13	584:5	616:16	170:14	465:18
100:2	594:19, 22	lived 565:23	185:1	469:21
137:4	595:8	liver 310:21	189:20	487:5
208:24	598:3	LLC 4:1	196:23	490:23
306:18	604:17	7:18	203:18	500:3
402:16	605:14	LLP 2:1	204:12	504:7
417:13	609:3	4:14 5:1, 9,	209:15	507:15
423:6, 9, 15,	610:21		223:8	514:9

519:8	105:10, 14	615:18	low-income	magnitude
522:15, 23	115:7	624:16, 17	555:20	160:23
524:20	149:17	Lots 7:17	ltracey@trac	161:2
531:20	167:6	190:23	eylawfirm.co	Mahjani
532:15	220:16, 17	339:18	m 3:18	370:8
547:7	241:10	458:2 479:5	LUCAS	main 175:4
553:10	337:14	loud 301:13	5:17	196:14
555:24	350:24	Louisiana	luck 575:24	major
556:7	371:6	3:16	LUKE 6:3	283:13
568:6	377:2	low 261:12	luncheon	312:12
570:23	409:6	267:7, 9	350:5	360:17
574:8	587:10	362:11	lying	452:22
587:24	617:10	423:12	409:24	454:7
588:20	looks 107:9	431:13	410:12	482:21
591:2, 3	115:16, 17	432:23		majority
597:7	185:17	434:24	< M >	244:10
604:20	192:13	452:21	M.D 1:13	278:16
606:21	216:16	454:16	9:3 35:2	420:13
618:11	598:20	456:14, 24	636:8	630:14
620:17	Lord	457:3	639:16	makers
630:12	138:18, 24	458:7	M.I.N.D	381:3
looked	Los 7:16	478:3	244:2	making
85:14	lose 190:22	547:15	M.P.H 81:8	90:22 92:5
106:4	461:10	low-birth-	ma'am	132:6
143:15	losing	weight	128:3	197:5
144:12	174:19	451:21	machine	434:2
206:1	loss 295:5	lower	177:14	449:15
261:4	302:21	196:17	557:12, 19	590:8
296:7	309:11	197:15	Madison	male 353:15
299:11, 18	lot 114:12	266:2, 3, 23,	6:10	malnutrition
300:14	124:12, 14	24 426:19	Maenner	360:16
304:15	245:2, 3, 5	427:12, 21	175:2, 4	452:22
365:2	251:12	428:13	177:21	454:7
373:8	252:10	435:14	179:5, 9	499:10
402:14	280:13	509:9	180:11, 20	malpractice
437:7, 12	296:19	527:3 572:5	Maenner's	565:12
460:4	300:8, 9	lower-odds	175:18, 23	566:13
473:9	377:3	426:9	178:12	567:3
503:6	487:16	lowest	Magdalena	man 172:23
524:11	509:17	92:12, 14	370:11	
579:19	596:6	94:6	393:21	Management
622:9	601:3	low-grade	magnifying	558:4, 6
looking	606:3	513:8	395:11	
51:24	609:8			

mandate	481:21	235:3	488:5	masse
210:11	486:22	240:15	501:21	327:23
611:6	514:8	258:16	503:21	607:3
mandated	mark	263:4	525:2	match
204:10	101:22	267:22	530:18	148:15
Manhattan	612:9	277:23	534:6	574:14
5:11	633:14	282:20	539:9, 24	matching
manifest	Marked	289:17	541:19	148:10
251:4	32:14	293:24	542:15	574:15
manifestatio	33:13	296:15	546:16	material
n 342:4	35:21 37:9,	301:5	551:13	355:24
manifestatio	23 41:11, 16	306:7	553:11	356:4, 7
ns 415:19	54:9 72:19	308:19	554:13	MATERIAL
manifests	77:2 79:8	321:3	555:4, 7, 10	S 10:10
248:17	86:15 93:1	332:4	568:18, 21	64:4
manipulate	94:22	333:13	580:17	180:17, 19
135:2	101:4	336:15	612:11	183:23
544:6, 7	106:18	341:7, 13	617:19	193:6
Manish	107:18	342:15	markedly	234:14, 21
380:22	109:12	349:4	110:5	235:1
382:12	114:2	352:1	marker	306:19
390:14	122:9	353:3	385:7	531:4
487:16	127:20	357:10	437:18	585:10, 19
Manish's	129:19	359:13	458:9	586:8
389:12, 14	131:24	361:18	MARKERS	589:2 590:9
Manual	136:8	364:9	25:16	maternal
142:6 195:1	147:12	368:13	344:11	360:14
manufacture	170:10	369:22	494:4, 5	377:15, 18
rs 580:8	172:19	374:22	497:23	422:20, 23,
616:24	176:2	379:13	498:8	24 423:1, 22
manuscript	181:1	388:20	Marla	424:1
259:15, 19	183:13	391:7	243:12	426:17
March 42:5,	187:8	392:3	Marte 8:1	427:19
20 44:24	190:9	394:4	Martha	428:11
45:6 63:6	192:6	401:7	96:14, 19	442:4, 7, 16,
129:8	193:1	411:5	240:20	21 443:6
134:15	194:15	417:5, 6	241:6	444:14
178:17	195:22	425:19	Masarwa	451:14, 24
365:20	206:20	429:13	605:17	454:4
366:17	218:23	433:14	mass 423:2	465:12
367:11	220:6	436:12	Massachusett	466:13
368:11	221:10	439:11	s 96:24	467:10
442:3	223:11	454:22		468:23
446:6	227:23	484:1		469:3

470:6, 12, 16	MDL 1:3	475:16	meant	103:21
471:1, 12	9:18 34:15	478:2	125:24	353:20, 21
475:3	631:16	496:1	210:5	422:9, 16
476:15	633:19	519:20	220:2, 21	423:20, 24
482:15, 20	MDL-	527:16	221:21	424:4, 8, 11,
483:2	RESPONSE	533:3	322:23	18, 21 425:2
484:6	S 9:20	555:2	555:15	444:2
513:14	MEAGHER	559:5	586:17	480:11, 12
535:18	5:9	586:12	measure	481:3
545:7	mean 68:1	602:16	399:6	514:4
602:12	88:18	604:9	437:9	530:1
606:10	112:15	605:11	440:5, 8	535:22
614:21	113:7	608:23	441:10	603:23
math 132:9	116:15	609:14	542:1	604:4, 11
mathematica	128:15, 17	611:7	548:10	MECHANIS
l 119:6	149:3	624:4, 10	measures	TIC 25:16
239:10, 15	150:9	meaning	81:8 140:4,	344:10
mathematica	159:23	155:18	6 147:4	media
lly 119:4	160:10	means	148:3	505:14
631:5	180:14	104:12	150:5	median
matter	195:10	208:2	151:16	182:11
34:13	250:17	217:2	380:18	medical
411:17	251:2	236:12	437:8	35:11 56:4,
442:5	259:9	245:1	measuring	10 57:20
484:7	262:12	247:3	261:5	65:17 66:8,
533:1 546:3	271:20	269:11	402:6	19 67:3
Matthew	283:23	270:12	546:22	68:4 70:3,
177:20	292:13	275:5, 8, 9,	547:24	5 71:9
187:17	302:10	11, 20	meat 223:24	72:15 79:3
mature	305:13	278:13	mechanism	81:21 82:4
420:10	313:3	318:21	46:22	88:13 89:9
maturing	318:2	339:12	312:4	97:1, 24
420:9	384:23	366:21	361:10	124:6
Mazefsky	400:4	389:21	424:15	180:7
174:5, 14	406:21	402:13	449:14, 16	351:24
M-CHAT-R	410:9	475:17	452:18	363:10, 24
548:15	417:19	479:11	457:13	365:15
McPartland	425:6	480:1	472:23	471:23
174:5	435:17, 18	602:18	476:4, 5	489:17, 18,
McSweeney	446:21	604:10	515:7	20 511:4
565:2	450:9	608:13	517:3, 7	512:3
mcwatts@wa	460:8, 18	609:16	532:21	513:4
ttsguerra.co	461:3, 13	616:6	mechanisms	518:22
m 2:10	466:19, 22	636:20	44:9	565:12

566:12	memory	message	231:21	538:11, 23
567:3 596:1	172:12	278:10	509:17	540:19
MEDICAL.P	205:11	messaging	methods	Michael
DF 22:15	333:10	406:9	109:8	138:19
medically	352:23	met 286:6	118:23	Michelle
94:1	362:3	META	140:9	1:15 34:21
medication	441:9	16:16	153:22	636:12
45:7 82:24	463:15	Meta-	179:5, 7	microarrays
92:17	men 354:10	Analysis	180:4, 5, 10,	291:14
135:3	Menges	187:12	12 197:24	microbiome
358:15	511:4	470:4	198:24	377:16
502:4 503:7	MENTAL	605:5, 16, 18	199:1, 24	microphone
MEDICATI	14:10	METABOLI	205:18	587:7
ON.PDF	18:19	C 23:7	232:4	microsomal
18:12	289:22	104:3, 19	291:10	292:9
medications	359:18	502:21	320:20	microwave
356:24	376:11	503:3, 15	371:7	292:24
377:19	393:7	513:15, 16	373:7, 8	middle
487:22	mention	514:5 545:8	532:16	418:18
502:19, 23	617:16, 17,	metabolism	586:19	460:16
503:5, 13, 16	24	311:11, 13	591:2	mid-fetal
Medicine	mentioned	526:6 536:8	597:2	421:8
75:6	478:1	metabolomic	608:20	MidHudson
396:23	599:20	s 103:20	methylated	511:4
598:10	610:24	metal 46:13	522:19	migrating
625:21	mentions	48:6 61:12	523:8	422:3
626:7 627:5	393:20	329:3, 4	METHYLA	MIGRATIO
medicines	618:17	487:8	TION	N 22:9
309:14, 15,	619:2	metallic	21:16, 19	417:1
19 504:2	mentor	253:15	312:19	418:22
520:11	393:20	metals	521:20	419:14, 16
521:1, 9	mentors	48:12	522:5	MIKAL 2:3
600:12	461:6	381:5, 10, 11,	525:11, 21	milder
meet 144:15	Merck	13 413:6, 23	526:10, 21	208:12
meeting	563:12	423:4	527:2, 20, 23	242:20
578:10, 14	MERCY	484:17	528:11	285:17
meets	22:15	487:7, 18	532:19	MILLION
272:14	351:23	methodologic	MGH 97:3	26:15
319:20	363:10, 24	al 142:13	mice 300:8,	389:4
415:19	365:15	143:22	23, 24	390:15
members	471:22	630:16	301:10	391:13
343:10	513:4	methodology	307:14, 20,	400:17
633:17	518:21	133:11	21 309:1	551:20
634:1	mess 74:10	198:18	310:5	554:20

MILLONIG		338:18	543:5, 14	moms
22:7		390:7	544:7	598:17
mind 355:13	miraculously	427:16	modifiable	599:1
mine 69:21	53:11	431:22	134:22, 23	627:12, 14
115:20	mischaracter	503:1	135:5, 10	628:5, 7
152:10	izes 214:2	507:1	349:19	MONAGHA
297:11	mischaracter	618:3	387:5	N 4:14 5:3
325:16	izing 65:3	620:10	430:1	money
461:17	misclassified	mistake	434:22	198:8
Mine's	153:8, 19	217:8	435:1, 7, 19	348:19
572:10	155:13	mistaken	441:21, 22	392:1
Minimize		198:18	modification	407:9
92:9 94:5	misdiagnosed	Mm-hmm	249:23	552:11, 19
Minsheu	212:22	79:16	Modified	553:4
174:5	misguided	216:2	548:14	559:6, 14, 16,
minus	183:1	290:15	modify	23 560:2
36:13, 14	misidentifica	329:23	435:21	monitor
minute 86:9	tion 208:23	330:3	491:15	507:7
87:14 93:9	misleading	392:20	modifying	monitored
96:17	381:20, 22	417:3	498:24	611:19
102:24	mispronounc	441:7	modulate	MONITORI
152:21, 23	ed 562:12	443:3	342:2	NG 20:13
184:5	misrepresent	523:22	molecular	monozygotic
186:17	s 404:15	531:6	310:17	258:4 272:9
188:11	missing	Møbjerg	524:18	
191:21, 23	169:15	98:24	mom	Montgomery
195:11	184:14, 23	model	284:10	2:15
196:3, 12, 23	301:11	100:10	448:16	month
224:2	438:5, 7	308:24	537:3	58:24 59:2
345:1	440:12	437:1, 2, 3	625:23	63:9, 10
379:23	485:19	438:13	627:17	171:22
389:9	Missouri	539:15	moment	485:12
392:10	3:10	540:5, 7, 18	87:5 107:7	573:10
395:1, 4, 12,	misstated	543:1, 10	155:1	583:9
15 456:4	267:12	544:3, 6, 11,	172:13	623:23, 24
547:6	misstates	13 631:5	206:7	months
minutes	197:19	modeling	209:11	201:16
154:12	211:4, 5	239:11, 15	239:8	202:3, 5, 16,
286:19	213:4	421:2	344:4	23 203:3
480:18	222:14, 20	MODELS	362:2	484:20
578:4	226:1	12:11	448:5 631:4	539:23
582:5, 6	231:24	309:1, 2, 6,	moments	morning
592:22	235:22	14, 17	126:8	433:18
	322:6	540:22		593:16

MORRIS 7:18	325:1 347:8, 16 357:24	move 127:9 543:15	mutation 270:11 271:5	452:9 458:6 460:8
MORRISON 7:8	358:6, 9, 13 369:10	moved 328:12	272:2 298:16	484:12 486:21
mother 285:6 338:22 483:10, 12 493:5 511:10 602:24 603:4 609:19 625:11, 13	370:9, 11, 13, 16 372:15 378:14, 23 380:24 382:13 383:11 389:2, 3 392:7, 14 393:5, 10 427:9 489:3	474:7 Moy 342:12 MP4 19:22 29:13, 16, 18 31:17 MT 30:7 32:7	303:18 315:12 316:21 354:2 355:20 368:22	524:4 567:23 568:1, 2, 5 570:24 623:1
mothers 83:2 296:6 426:22 427:3 443:6 513:9 602:9, 20 610:5 625:10, 20	503:19 504:1 505:9 508:7 534:1 550:19 551:19 552:4, 20 553:5, 15 554:4, 11 558:18 560:9 594:3	multifactoria l 368:2, 15 multigenic 343:7 multi-hit 346:5 multiple 84:18 140:21 282:14 343:10 546:12, 13 567:24 606:6	mutations 249:15 270:24 271:12, 13 272:12 295:4 318:3 319:20, 24 320:14 353:15 354:13	named 69:9 172:23 352:21 511:8
mother's 284:1 602:11				narrow 391:18
motivations 388:16				National 376:5, 11, 15 377:9 378:8 393:6 425:24 490:17
motor 305:24	599:6, 11, 22, 24 600:23 612:17, 18 613:3 617:15, 23 618:6 619:21	multivitamin 426:3, 18 multivitamin s 427:10 Murdica 407:8 mutagen 355:18 mutagenic 252:5 353:17 355:16 mutate 273:2 mutated 542:24	< N > N.W 6:18 7:21 NADINE 6:9 NADLER 12:10 342:13 name 34:4 35:9 50:20 53:2, 10 59:7 62:14 65:15 72:3, 7 268:14 286:12 359:9 366:12 423:7 442:3 444:22 446:11	nation's 82:3 natural 436:4 nature 360:11 469:7 502:3 578:24 603:13, 20 616:9 near 36:10 nearly 510:1 necessarily 81:16 113:11 139:3 140:5 180:14 265:23 273:3
MOUNT 19:9 25:12 27:10 30:9 56:8 57:15 66:2, 16 67:15 69:20 72:3, 12, 24 73:7, 9, 13, 17, 19 76:24 98:9, 15, 16 123:15, 21 258:24	MOUSE 12:11 437:2 539:16 mouth 406:20, 23 625:11			

300:5	204:14	negative	NEUROBIO	neuropsychol
327:7	207:5	82:1, 6	LOGY	ogical
382:11	232:3, 13	182:13	18:19	458:12
385:6	248:24	328:3, 20	289:21	NEUROSCI
400:4	254:17	329:10	359:18, 20	ENCE
424:13	279:19	351:17	neurodevelop	14:14
429:21	324:20	500:14	ment 49:16	31:19
435:16	343:22	606:7	415:6	392:15
480:15	346:13	neglected	416:17	501:18
492:14	364:3	462:22	418:20	neurotoxic
527:16	365:5	neither	420:15	298:7
528:15	371:14	139:2	513:22	Neurotoxicit
532:20	373:7	neonatal	545:13	y 100:5
necessary	377:3	535:18	NEURODEV	neurotransm
92:14 637:4	396:7	537:19	ELOPMENT	itter 472:19
need 41:23	409:3	nerve	AL 22:10	
64:15, 17	414:12	309:10, 17	99:22	neurotrophic
74:19, 21	428:1	437:18	356:23	537:13, 16
76:10	463:2	541:6	394:13	545:16
77:21 92:9	465:18	NESTLER'S	397:18	neurotropic
102:4, 10	507:17	18:18	398:3 417:2	514:1
106:23	532:9	359:18	neuroinflam	never 87:13
116:14, 17	547:7	net 165:2,	mation	102:20
118:23	574:13	11	513:23	117:14
121:4	585:17	NETWORK	545:14	118:14
134:21	590:21	20:13	neurological	122:6
139:9	592:9	neural	458:11	173:13
142:22	597:1	418:20	522:7	175:15
147:8	621:22	419:6	neuronal	226:24
149:16	needed 90:9	430:9	45:18	229:21
151:8	91:8, 22	438:24	514:20	232:9
152:21	203:22	496:23	515:1, 21	243:7, 9, 11
153:12	232:5	497:5, 12	605:4	255:20
154:1, 11	598:10	Neuren	neurons	410:11
159:10	needs	562:7, 8, 9	309:2	432:15
163:7	117:18	NEURITE	419:15, 19	446:8
164:7	122:1	22:8 416:24	420:10	485:8
171:16	150:11	Neuro	493:22	515:14
173:15	154:8, 9	493:23	495:15	564:16
184:16	207:18	NEUROBIO	496:12	571:10
187:21	216:3	L 22:11	540:20	580:10
189:7	345:1	neurobiologi	neuroprotect	615:8
196:23	508:12	cal 416:20	ive 514:1	
199:13	606:4		545:16	

Nevertheless	next-to-last	162:8	noted 34:18	282:1, 9
602:2	631:8	169:22	155:9	283:20
623:19	NICHD	183:3	516:5	285:5, 14
NEW 1:1,	375:11	191:14	637:11	303:17
14 3:5	376:1, 5	199:4	639:11	315:11
4:17 5:5,	night 64:2	200:11	NOTES	319:19
12, 19 6:11	129:24	226:19	640:1	564:5, 6
7:21 12:18	402:11	231:16	noteworthy	NPCs 422:3
16:7 19:10	NIH 259:18	246:23	168:4	NSAID
24:9 26:13,	348:20	297:1	notice 1:13	91:12
17 34:12	374:8	336:2	9:18, 21	nucleic
36:6, 10	NIMH	363:21	36:2, 20	355:21
183:17	376:10	367:8 405:4	71:7	null 337:3,
185:14	nine 123:23	nonsense	noticed	15 338:7, 16
283:21	564:24	331:7	326:22	NUMBER
402:20	630:6 631:1	nonspecific	402:10	15:15 37:3,
449:15	nkohane@btl	480:3	noting	16 39:21
489:2, 19	aw.com 6:12	482:11	597:14	40:1 96:8,
493:2	NO.3 10:22	nontheoretic	Novartis	13 97:6, 20
507:4	non-case	al 368:11	564:3, 4	98:11, 23
542:20	153:10	non-white	novel 540:7	108:3
544:5	155:14	555:20	November	120:8
565:15, 20	noncompara	Nope	58:24	123:16
567:17	ble 159:24	101:23	77:18	168:17
620:1	nongenetic	633:2	107:23	175:11
631:18	347:2 360:7	Nordisk	127:13	176:18, 19
newborns	nonheritable	564:5, 7	439:10	182:2
77:11	43:2 51:8	normal	453:7, 12	188:2
458:10	111:7	250:23	455:20	194:20
newer	267:8	251:5 252:6	539:4	196:16
612:20	271:12	North 2:21	541:18	197:14
news 278:8	273:5	4:8 22:23	573:11	219:17
322:16	274:11, 16	Northern	574:24	230:10
379:17, 18	275:15	195:4	575:7	235:9
NEWS.PDF	346:21	nose 440:2	novo	257:4
23:18	365:24	nostalgic	249:13	264:13, 24
news/bad	367:14	441:18	257:19	277:15
278:8	non-peer-	notably	268:20	316:8
322:16	reviewed	50:10	269:6, 11	378:1
NEWSLETT	90:6 486:2	Notary 1:16	270:3, 4, 11,	404:12
ER 18:14	Nonresponsi	636:14	17, 24 271:9,	442:20
425:15	ve 85:21	639:23	11, 13, 16, 24	448:20
428:10, 16	90:15	note 504:15	272:11, 12	451:20
	120:12		280:24	490:15

493:20	64:21 76:7	314:11	68:7 70:20	214:16
494:15	84:17 88:8	315:1	71:2 78:18	215:2
495:13	117:13, 23	324:12	79:23	222:13, 19
496:23	118:12, 13,	329:12	83:22 84:9	225:24
497:5, 12, 21	17 120:1	333:5	85:21 86:5	226:18, 20
499:8	121:24	336:3	88:3, 16	227:4
534:21, 24	124:23	344:24	89:19	229:9
572:5, 14	130:8	346:10	90:15	231:15
574:12	132:14, 21	363:2	95:17 96:2	233:9
592:5	146:6	364:23	99:5	234:15
594:7	155:5	367:9, 19	104:23	236:15
595:15	167:4	373:20	106:1	237:16, 19
numbered	173:7	395:6	111:16	238:14
39:15	179:18	404:11	114:17	239:2, 18
numbers	183:4	405:12, 13,	118:19	241:16
38:11	184:13	15 406:12	119:11	245:15
132:7	186:11	445:21	120:12	246:1, 10, 16,
174:8 572:3	188:6, 13	446:15, 23	125:8	22 247:4, 21
numerical	189:23	447:23	126:14	248:5, 20
165:23	196:21	450:21	145:21	249:7
166:12	197:18	451:9	154:21	250:1, 14, 24
167:1, 13	198:11, 12	476:18, 19	155:9	252:13
Numerous	199:5	496:19	158:1	253:17
550:9	200:12	497:18	161:18	256:13
nutrients	205:3, 4	499:3	162:7	261:22
380:18	207:15	516:24	166:15	263:17
498:23	212:12	551:21	169:21	267:3, 16
nutrition	230:22	552:1	172:7	270:20
493:21	231:17, 23	557:20	174:20	272:4
495:14	235:21	559:7, 19	188:19	274:22
Nutritional	240:11	560:12	189:6, 8	282:5
491:12	246:24	583:15	191:13, 15	296:24
493:5	252:19	585:24	194:6	299:1, 23
NW 6:4	254:6	586:23	198:19	303:10
	255:6	590:12	199:3, 11, 20	318:9
< O >	263:13	591:13	200:10, 17	320:3
oath 351:4,	271:17	623:4	201:21	322:5
12 352:8	295:23	625:17	202:17	323:22
433:4	297:2	627:21	204:1	325:7
obese 513:9	298:9	630:6 632:2	205:1	326:12
object	299:13	Objection	208:5	327:3, 17, 18
53:14 55:6	305:10	47:7 48:18	209:8	328:4, 21
56:24	308:5	59:9 60:10	211:3	336:1, 8
61:19	312:14	62:9 64:7	213:3, 14	337:6, 16, 22

338:8, 17	479:12	614:5	obstructing	341:24
339:14	481:12	618:2, 8	334:24	369:4
340:4, 11, 24	482:24	620:9, 21	obviated	415:18
347:11	483:18	622:1, 12	463:2	419:7, 15
348:6, 10	484:24	626:3, 14	obvious	421:20
352:13	485:21	627:1	430:15	October
357:2	490:2	628:22	obviously	388:24
361:5	494:17	632:21	331:24	542:13
363:12, 20	495:5, 6, 17	633:20	386:11	odd 115:19
364:1	497:2	634:4	440:10	odds 443:12
366:4	498:2, 15	OBJECTIO	540:22	444:12
367:7	499:17	NS 9:21	581:15	470:7
378:17	500:8	276:13	616:3	605:22
383:2, 15	502:24	objective	occur	offense
384:13	505:21	185:12	249:15	410:17
385:13	506:1, 24	186:3	269:22	offer 81:22
386:2	510:11, 18	Observation	271:2	offspring
388:12	511:17	139:21	272:14	339:1
390:6, 18	515:3	547:2	319:20	358:17
399:22	516:14	549:4, 20	362:23	377:16, 23
403:16	517:22		364:18	393:14
405:3, 5	519:5	observational	415:20	426:5
407:11, 21	520:15	597:16	425:5	444:7
408:22	522:9	605:8	occurred	470:7, 14
409:15	524:9	observe	40:5 68:15	471:16
410:1	527:4	144:8	269:12	473:6
415:13	528:4	observed	270:13	481:11
427:15	531:15	160:19	284:23	482:8
431:21	533:11	221:11, 19	375:13	oh 64:14
432:13	550:21	228:19	376:18	73:4 85:7
434:6	552:22	229:3	611:6	105:7
452:11	553:6	230:17	occurrence	141:15
454:18	554:6	232:17	451:16	146:2
459:7	556:21	233:24	occurring	151:2
463:10	558:10, 21	236:10	272:16	156:23
466:15	569:16	346:7	353:24	157:2
468:14	573:12	473:14	444:2	297:4, 13
469:14	576:10	obstacles	541:5	321:9
470:20	577:7	489:16	544:18	326:3, 6
474:20	584:14, 24	obstetric	occurs	394:18
475:6	587:21	609:24	246:15	445:7
476:7	592:1	obstetrical	272:15	450:11
477:2	596:10	50:2 609:12	281:12	453:19
478:7, 18, 23	607:15		303:18	463:20, 22

Confidential Subject to Protective Order

541:14	108:6	176:20	259:8	324:6, 19
544:10	109:5	177:16, 19	260:12, 15	325:13, 17
546:6	110:16, 22	179:3, 24	261:11, 17	326:1, 6, 17
547:17	113:8, 20	180:23	262:16, 20	327:11
567:22	114:12	182:7	263:2, 17	328:1
588:7	115:21	186:2	267:6	331:6, 8
630:18	116:9, 11	189:13, 17	268:14	337:13
Okay 35:15	117:1	192:4, 20	269:2	339:9, 24
36:14, 19	119:2, 9, 19	194:13	270:9, 14	341:11
37:21	120:11, 23	195:8	275:7	345:14, 19,
38:14	121:23	196:10	276:20	22 348:14
40:10, 23	123:7	201:10	279:21	352:20, 24
41:7 43:14	124:2, 6, 9	202:1	281:13	353:13
47:4, 21	125:14	203:6	284:16	356:22
48:3 56:17	126:22	204:8, 11	285:11	357:19
57:11, 24	127:18	211:14	286:7, 10	358:2
58:11, 16, 19,	129:4	212:15	287:4, 11	362:20
23 59:4, 20	130:11	213:23	288:19, 21	365:14, 18
60:5 61:8,	132:13, 20	215:23	289:15	369:9, 20
13 62:5	133:9, 17, 24	216:8, 18	291:2, 11, 23	371:8, 12
63:10 64:2,	135:12, 20	217:19	292:12	372:19
13 65:12	137:1, 9, 21	218:1, 10	293:6, 13, 16	373:16
69:10 70:7,	139:15	219:6, 23	294:17, 23	374:3, 20
10, 15 71:17,	140:11, 24	220:20, 24	295:14	376:4, 14, 24
20 72:11, 14	141:9	221:6, 24	297:18	377:5
73:9 74:16	142:3	225:17	300:3	378:14
75:18	144:18	227:14	301:20	379:3, 11
76:23	146:21	229:18	302:6, 24	380:1, 12
77:24 78:7	147:10	240:13	306:22	381:24
79:6 80:5	149:19	241:24	307:8, 13	382:24
81:18 82:7	151:3, 4, 13	242:7	308:11	383:8
84:3 85:11,	153:15	243:13	310:4, 12	384:5
20 86:12	154:22	244:23	311:10	385:19
87:24 89:3,	155:8, 23	245:5	312:11, 19	386:20
12 90:14	157:2	247:10	314:3, 20	387:8, 24
91:6 92:23	158:13, 16,	248:13	315:6	389:14, 19
94:14 96:5	20, 21 159:5	249:18	316:23	390:3, 12
97:20 98:4,	162:24	252:4, 16	317:12, 18	392:9
23 99:10	163:11, 18	253:12, 23	318:2	395:5
101:24	168:2	254:17	319:9, 15	397:3, 9
103:10	169:11	255:17	320:9	398:6, 17
104:17	171:23	256:5	321:20	399:17
106:7	172:2	257:5, 12, 19	322:22	400:9, 15, 22
107:2	175:2	258:2, 10	323:8, 20	401:5

402:5, 14, 15	475:2	565:1, 8	old 203:14	OpenPayment
403:3	478:4, 15	566:19	295:13	ts 552:9
407:17	480:17	567:5, 10, 20	421:8 451:4	openpayment
408:16	482:15	568:15	older 160:7	s.com 551:9
409:18	483:24	569:1	362:12	operating
411:19	484:16	570:18	443:5	536:19
413:3, 10	486:19	571:12, 19	451:15, 20,	operations
414:5, 13, 23	487:5, 21	572:13, 24	24 461:9	505:14, 15
415:2, 23	489:5, 21	574:7, 11, 17	omic 421:1	opinion
416:3	490:10	576:5, 19	omitted	77:21 92:6
418:3, 6, 16	491:8, 10, 20	577:2, 15	53:20	94:10
419:5, 12, 24	492:2, 23	578:24	once 398:21	111:18
420:22	493:14	579:6, 8	446:8 537:1	120:24
421:13, 24	494:14	580:5	one-fourth	143:3, 7, 9
422:7	498:20	582:15, 24	233:24	162:6
423:21	500:17	585:7, 8	236:10	229:20
426:12	503:18	587:14	one-half	364:14, 15
427:9, 18	508:14	588:9, 14, 24	303:1	594:18
428:4, 7	510:24	589:6, 16	ones 133:1	614:20
429:18	512:1, 5	590:1, 11, 19	212:16	615:11, 13
431:9	513:2	591:6	271:15, 20	629:7, 13
438:15	515:10	592:13, 18	287:4	opinions
439:7	516:2, 10	593:13	466:7, 8	52:22 65:5
442:1	517:13	595:21	550:9	75:12
444:16, 18	521:11, 17	596:5	586:20, 22	76:15
445:8	522:2	598:5, 22	587:4	124:22
449:5, 20	525:9, 19	599:5, 15, 20	one-third	125:3
451:3, 13	527:12	600:6, 12	181:19	161:22
452:21	528:17	601:3, 11, 22	onetime	236:1
455:15, 24	529:21	602:2	201:20	243:15
456:11	530:6	603:21	210:5	408:1, 4
457:14	531:12, 20	604:19	ongoing	584:5, 7, 10
458:16	532:14	606:13, 19	134:18	
459:12	533:6	610:14, 19	350:19	opportunities
461:21	537:18	614:9	351:20	540:13
462:5, 12, 19,	538:24	619:6, 18	635:2	553:19
24 464:3, 9,	550:6, 17	624:21	ONLINE	OPPORTUN
17 465:12	552:1, 17	626:21	20:22	ITY 16:22
466:13	553:3	628:6, 17	55:16	44:4 62:17
467:13	557:15, 20	629:15	183:20	74:2 85:16
468:5, 8, 19	561:6, 12, 19	632:17	369:14	227:3, 8
469:2, 10	562:20	634:8 635:9	open	375:5
471:6, 10	563:3, 18, 22		394:15, 17	486:17
472:7, 24	564:11, 19			

516:6 636:9	405:2	503:12	over-the-	508:20, 24
oppose 65:4	608:15	518:24	counter	592:24
opposed	original	520:2	92:16	593:4
64:20	46:4 52:20	530:14	overview	635:14, 19
169:1	230:8, 17	558:14	418:7 584:9	pack 450:16
307:16	529:16, 17	634:14, 21	overweight	pack-years
options	637:15	outstanding	513:18	450:4, 6
561:4	originally	57:14, 20	Ovid 560:22	PAGE 9:16
ORDER	140:23	65:17 66:7	OWNERS	10:5 11:5
1:8 121:5	220:1	67:8 69:22	24:13, 17	12:5 13:5
154:7	Ortega 8:7	70:16	557:13	14:5 15:5
163:4	34:4	71:21 88:2,	558:3, 7	16:5 17:5
189:11	orthopedic	12 89:8	oxidative	18:5 19:5
214:10	245:18	97:1	45:18	20:5 21:5
232:1, 12	oscillations	124:20	478:22	22:5 23:5
250:21	314:9, 21	126:11	479:4, 7, 11,	24:5 25:5
282:15	ounces	128:19	19, 24 480:2,	26:5 27:5
330:12	458:9	outweigh	19 481:1, 3,	28:5 29:5
334:14	ourself	599:4	6, 9 482:6	30:5 31:5
335:3	184:9	overall	513:24	32:5 33:6,
365:6	Outcome	180:10	514:20	9, 10, 13
371:13	525:12	182:11	515:1, 22	36:4, 22
379:6	536:6	211:1	522:6	37:14 38:6
508:13	605:20	226:15	545:15	39:9, 16, 19,
596:23	outcomes	464:20	605:4	22 40:16, 17
628:16	356:22	overblown	Oxnard 7:4	44:7, 22
632:19	430:22	199:2	oxygen	46:6, 12
organize	492:6	260:22	475:13, 15,	49:6 51:5
116:12	528:23	Overbroad	18, 23	54:14, 20
organizes	533:19	338:9	476:16, 22	86:24
461:6	616:9, 11	388:13	477:16	87:10 91:4,
Ori 56:14,	outdated	466:16	478:3, 5, 16,	10 96:5, 10,
16 366:8	486:10	overexposed	21 480:4	11 99:11, 15,
orient	OUTGROW	489:21	Oxytocin	17, 21 100:3,
159:10	TH 22:8	overlooks	436:2, 22, 24	12, 15, 16, 19
221:7	416:24	381:9	437:13, 15	108:3, 4, 6
origin	outrageous	overruled	438:1, 9	110:1, 8, 11
246:21	591:20	263:18	439:1, 4	114:23
248:11	outside	395:13	440:15, 21	115:5, 12, 13
250:6, 11	217:7	oversight		116:4
319:1	252:2	54:4 62:2,	< P >	117:6
339:21	253:20	7, 23 64:15	p.m 350:2,	118:4
351:20	254:10	462:22	9 410:23	122:21
	413:22	463:5	411:3	123:11

126:23	259:23, 24	433:12	574:12, 18	118:23
127:12	268:17	438:22	581:18	121:3, 5
129:4	274:5	453:7, 14, 18,	596:14, 15	122:5
131:2	285:2	24 455:21	597:21	127:24
135:18	287:18	459:23	600:23	134:15
139:8	288:6, 11, 24	465:22	603:9, 22	143:2
147:11	289:6, 14	469:22	618:19	153:13
148:16	290:5	470:1	619:5	154:5, 10
149:4	321:8	472:1, 13	638:4 640:2	156:7, 22
151:20	332:3, 11	473:12, 21	pages 96:9	158:7
152:24	333:8, 12	481:20, 22	115:15	162:4, 19, 23
157:11	342:19, 21,	482:1	135:15	163:6
158:13	22, 23	484:1, 17	184:14, 24	169:9
168:3	343:22	487:6	218:16	171:14
171:5, 14	345:5, 22	491:10	233:20	173:17
173:2, 5, 19,	352:6, 18	492:3	413:4	174:14, 15,
22 174:12	353:14	493:15	514:7	22 175:3, 19,
179:9	354:6, 16, 21	498:20	545:4	23 176:16
181:23	358:19	499:8, 21, 22	550:3, 5	178:4
182:8	360:1, 7	501:19, 20	577:21	180:20, 21,
184:2, 3	362:6, 15	502:17, 18	590:23	24 182:16
185:9	364:7	504:13, 22,	639:6	183:7, 11
187:1, 24	365:11	24 505:1	pagination	184:6, 20
193:8, 14, 19	368:19	507:15	151:3	187:4
197:4	370:16	513:5	paid 408:3	190:4
203:11, 19	371:9, 11, 16	514:12	553:5	191:19
206:14	372:19	519:11, 14	561:9, 10, 12,	193:5
207:12	375:10	520:21	14, 16	203:10, 18
211:17	380:3	523:3, 18, 19	PAIN 30:21	204:17
219:12	381:19	526:2	80:13	205:12, 24
220:13, 14	382:1	528:18	86:19 597:5	217:2, 5, 12
221:6	387:10	531:4, 21	PALMQUIS	218:20
224:17	391:1	532:2	T 24:21	219:3, 13
228:10	397:22	534:13	411:12	220:18
229:17	403:12	536:17	Pamela	226:1
230:13	411:21	547:9	138:19	231:24
232:14, 23	412:2, 6, 9,	549:13, 16	PAPER	232:2
234:19	14, 16, 21	555:24	28:11 40:1	233:15
235:2	416:6, 13	556:5, 6, 24	52:20	258:13
240:24	418:18	558:15	77:22	259:1
241:4	419:5, 12	563:9	81:16 82:9	267:13
242:8	420:22	569:2, 3	92:20, 22	287:24
243:19	421:24	570:4	116:14, 15	304:16
258:20	429:11	572:5	117:14, 17	306:4

320:22	261:8	parent	348:8	223:3
337:1, 9, 12	346:19	269:13	349:14	255:21
341:7	503:6	284:23	353:14	266:1
344:8	586:13	296:22	358:20	300:4
346:16	587:9, 11	316:22	364:15	329:18
352:20	588:1	339:2	372:21	374:16
357:14, 16	paracetamol	449:23, 24	373:11	405:24
359:9	80:15 95:4	548:13	396:21	414:9, 11
368:12	509:20	PARENTAL	406:21	417:15
369:9	621:24	13:13	430:14	418:2
370:3, 6, 8,	paragraph	23:13	449:6	434:21
12, 15, 17	82:11	42:15 50:1	455:9	496:8
371:6, 14	102:17	51:9, 16	465:22	552:12, 13
372:14	108:15	274:7	484:10	595:10
393:1	127:15	360:8	487:6	609:15
396:12	135:16, 19	366:1	504:16	particularly
415:23	147:19, 21	367:15	526:3	353:22
459:12, 19,	148:19	394:11	532:1	particulate
21, 22 460:2,	149:10, 14	423:22	538:21	484:7
9 464:18	153:17	parents	543:22	parties
465:9, 18, 21	157:5, 6, 12	205:16	545:18	36:11
466:5	163:22, 23	261:21	550:4	373:24
490:15	164:6	269:14	580:23	550:19
513:6	168:3	281:3	587:1	558:19
514:7, 9	171:7	298:15	612:24	partly
523:21	173:24	315:16	613:7	370:21
524:24	211:18, 20	316:16, 18	620:19	PARTNERS
525:10	215:24	319:2, 7, 17	628:14	25:11
530:17	285:3	451:20	participate	41:10
531:13	392:22	parents's	486:13	553:16, 18,
545:2	453:22	284:24	575:11	23 554:2
546:20	523:3, 6, 20	Parkway	576:4	PARTNERS.
571:9	528:19	2:21	participated	PDF 25:12
papers 37:4	602:7	part 42:24	348:18	parts 244:7
69:1 80:24	604:24	43:18 54:4	351:10	395:9
114:10	606:9	64:4 78:10	562:2	party
162:5	paragraphs	170:21		559:17
175:5	80:7	208:11	participating	635:5
181:14, 17	paraphrase	230:23	365:16	pass 298:15
182:1, 5, 11,	413:13	240:12	particular	315:16
12 190:18,	para-	255:17	77:21	319:3
23 204:24	sequence	259:23	88:21	354:12
244:18	302:19	266:16	180:21	passed
259:2		345:6	222:3	269:13, 24

284:22	526:7	175:16, 24	408:11	264:12, 14,
319:6	529:6, 10	201:6	430:11	15, 16, 17
449:23	patient	227:11	460:15	265:12, 13,
passes 603:1	432:16	508:5	471:19	15, 19 266:4,
passing	patients	pejorative	486:11	7 267:8, 10,
322:23	91:12	219:24	497:7	14 268:19,
passionate	patient's	373:17	515:7	22 270:5
348:1	543:4	pen 585:20	517:8	273:12
PATERNAL	patterns	pending	518:15	274:15
14:7 353:7	104:3, 18	216:5	552:11	275:22
354:9	106:10	penetrant	602:19	276:8
355:5	228:13	285:7	611:22	277:14, 16,
362:12	pause 410:4	penetration	623:22	17, 18 278:7,
423:23	pay 560:21	281:4	PEOPLE'S	13 280:6
424:1			26:16	283:9, 10
443:17	PAYMENTS	Pennsylvania	379:6	293:8, 11
444:13	27:10	6:4	381:4 389:5	294:8, 19, 21
451:14	551:19	people	percent	303:1, 3
452:1	552:3, 5	71:11, 23	67:14	318:19
path 380:11	553:5	91:17	164:21	321:15
pathogenic	556:16	144:12	165:4, 12	322:3, 15
268:20	560:9	166:9	170:18, 19,	323:6, 17
282:10	Payne	174:19	20 175:10	324:8
540:15	416:10	188:2	179:12	325:6, 18, 21,
pathologic	PDF 19:13	190:21	182:13	22 326:17,
251:8	22:12 25:9	209:14, 15,	188:5	20 366:19,
pathology	27:11	21 231:2, 8	193:22, 24	21 403:23
418:15	28:13	239:14	203:15	405:1
pathophysiol	29:11 30:22	240:5	206:10	420:6
ogy 309:8	peak 421:19	244:23	207:13, 24	426:15, 19
321:14	Pediatric	264:15	208:1, 3, 10,	427:11, 21
pathway	565:3	277:17	14, 16 209:5	428:13
300:15		290:23	210:19, 20	443:8, 21
309:21	pediatricians	298:12	224:6	444:8
346:5	210:12	300:19	235:16	607:12, 21
421:3	Pediatrics	307:20	237:15	608:6, 10, 11,
519:19	137:19	310:5	239:23	12, 14, 18
532:4	201:13	337:19	242:13, 21,	609:1, 4
	455:20	339:17	23 243:2, 21	630:18, 23
PATHWAYS	peek 612:16	374:12	256:23	percentage
15:8 268:3	peer-review	377:2	257:7	144:15
343:10, 12	55:16	383:20	260:1, 20	167:20
472:19	peer-	384:1	261:3, 6	168:21
522:6	reviewed	391:21	262:10	172:4

237:5	160:9	pesticides	307:1, 11, 24	pieces
238:10, 22	243:24	298:7	310:7 312:1	455:7
240:7	permanent	299:21	phenomenon	613:12
318:22	356:2	ph 1:19	210:5	pin 278:17
607:12	permanently	Ph.D 70:6,	341:24	Pinto 268:7
630:1, 10	355:23	7, 11 75:4	phenotype	Pinto-
percentile	person 2:3,	81:8 129:2	300:17	Martin
470:8	4, 14 5:10,	PHARMA	318:22	455:4, 9, 10,
Perfect	11 8:6, 7, 10	24:8, 18	368:23	16
218:1	43:23	554:5, 20	440:20	Place 2:8
280:20	44:14	555:23	441:5 608:2	165:17
performance	45:13, 21	556:8	phenotypes	419:19
439:18	69:8 75:9	558:8	301:17	427:4 508:8
PERINATA	80:22	560:20	Phenotypic	placed
L 11:20	90:22	PHARMA.P	306:13	260:19
13:13 23:7,	175:14	DF 24:12	phone 592:5	261:2
13 42:14	278:4	pharmaceuti	photograph	placenta
43:2 51:8,	322:12	cal 552:12	392:23	312:12
16 109:20	460:21, 23	558:20	phrase	532:5
273:5	461:5, 7	625:16	104:11	PLACENTA.
274:7, 12	605:13	Pharmaceuti	247:2	PDF 21:17
275:11, 24	personal	cals 562:1,	271:24	PLACENTA
346:21	130:22	7, 8	410:16	L 21:19
365:24	PERSONAL	PHARMAC	450:4	311:20
367:14	IZED 18:15	EUTICALS.	physically	312:7, 20, 23
423:11	personally	PDF 21:8	225:20	313:10
511:15, 20	98:22 99:2	pharmacist	physician	525:10
512:5 567:8	114:8	94:2	94:2	526:10, 20
period	243:17	PHARMAC	physicians	527:2, 20, 23
92:15	464:16	OLOGICAL	621:2	places 260:1
117:8	persons	14:16	physiology	Plaintiffs
132:12	127:3	Pharmacy	380:19	2:12, 17, 24
133:5	person's	6:13	539:16	3:6, 12, 19
161:11, 15	380:19	phase	Picciotto	4:12, 19
170:21	567:22	257:16	242:1	5:7 9:21
221:18	perspective	PHELAN-	pick 434:20	60:16
228:21	65:8	MCDERMI	picture	63:14
422:2	Persson	D 28:19	281:9	64:17
610:22	458:18	300:7, 10	282:16	330:17
periodically	pesticide	302:1, 6, 17,	398:20	407:9
507:3, 13	251:12, 17	24 303:9, 16	piece 270:6	565:18
508:13	298:24	304:3, 17, 24	302:21	579:4
periods		305:15	403:19	580:11
49:15		306:2, 14		614:3, 11, 18

615:4	436:10	plays	563:9	581:17
622:17	439:7	366:23	592:16, 22	600:6 614:4
631:9, 22, 23	476:23	446:13	626:9	pointed
632:18	478:5, 6	517:19	632:10	447:2
633:8, 18	519:18	533:9, 16	637:3, 8	485:10
634:2	playback	Plaza 4:8	pluripotent	486:20
plasticity	266:18	7:9	103:19	603:21
437:12	277:19	PLC.PDF	309:4	617:14
513:24	279:15	24:18	Plus 1:13	pointing
517:15	284:12	plead 74:7	36:5 193:22	87:17
538:3	294:15	490:6	PMC.PDF	103:3
545:15	302:2	please 54:8	26:9 28:21	176:11
platter	309:23	72:18 90:2	point 60:17	211:9
490:12	322:17	91:2 92:2	86:1 111:9	Points 51:6
Plausibility	401:21	107:8	125:14	171:17
412:17	437:23	112:21	158:5	367:12
516:22	441:1	123:11	203:4	376:21
plausible	539:19	131:2	204:3	598:13
44:9 422:8,	541:10	149:10	209:7	poisoning
15 423:19	542:8	152:23	210:21	61:12
424:5, 7, 15,	543:20	158:24	214:1	329:3, 4
17, 21 425:1	played	170:9	222:3	policies
604:3, 15	264:3	175:21	228:13	501:2
623:10, 14	266:21	190:12	237:24	policy
play 51:9	277:2	193:12	245:8	201:14
262:20, 24	278:2	197:1	283:7	
263:21	283:1	207:6	307:18	POLITICAL
273:13	294:3	211:18	345:12	21:13
274:16	301:8	223:10	385:23	pollutant
275:24	308:22	225:13	386:1	254:21
276:9	322:1, 10	237:2	388:1	pollutants
293:21	401:13	276:22	407:17	255:14
308:12	436:19	277:22	432:8	279:11, 22
312:20	439:14	342:19	444:1	280:1
322:8	539:12	343:20	447:6	pollution
331:8	540:3	347:21	460:13	423:5
347:3	541:22	353:2	463:1	483:24
353:22	542:18	381:16	532:17	poor 464:6
366:1	playing	389:10	547:10	Population
367:15	263:7	459:23	561:17	78:9
385:21	476:1	469:24	578:11	216:14
401:5	582:16	514:12	579:18, 20	218:12
420:14	playoffs	519:12	580:12	266:6
428:3	582:16	554:17		326:11

456:21	482:13	609:10	pre 273:5	472:7, 11, 15
509:14	595:2, 10, 11	616:2	274:11	473:3, 10, 14
608:16	605:24	potentially	373:1	474:1, 18
population-based	627:11	239:21	383:12	pregestational
473:23	possibly	349:19	387:14	I 464:19
550:2, 7	405:12, 20	385:16	precautionary	PREGNANCY
POPULATION-WHO	441:24	398:13	81:7	19:7
10:16	postconception	402:7	95:5 621:23	30:8, 12
portfolio	419:17	427:2	precise	31:13, 20
556:15	Postdoctoral	480:6	174:7	45:9 73:12
poses 620:2	393:8	499:5	360:10	76:4 77:7
posit 136:19	posted	534:18	precisely	78:15
position	378:20	579:3 603:5	341:8	82:19, 24
64:20	POSTMAN	potentiation	preclinical	86:20
65:18 68:6	4:1	437:10	300:20	89:17
82:3	postnatal	pounds	precursor	90:19
197:20	265:10	458:8	418:20	91:19
261:19	373:1	Powell's	predict	92:10, 18
487:1, 4	383:12	455:5	379:8	93:24 95:5
625:20	386:22	powerful	380:21	101:12
627:13, 14	387:14	281:1 282:3	381:6	278:24
628:5	492:5	PowerPoint	401:2 502:6	299:6
positive	postnatally	130:4	predicting	338:23
82:5	421:20	285:12	402:9	339:4
possibilities	POSTON	323:13	prediction	357:1
469:17	19:12 429:5	387:9	161:6	358:16
possibility	postulated	406:2, 7, 11	PREDICTIVE	362:14
50:17	528:19, 20	409:7	25:16	391:22
186:7	530:10	PowerPoints	344:10	392:17
253:10	POTENTIAL	404:7, 20	501:10	393:13
521:16	L 14:19	405:9	predispose	426:18
possible	23:20 50:3, 15 81:3	407:18	377:14	427:11, 20
89:18	178:13	practice	predisposed	428:12
90:20	353:20	53:1 432:5	320:2	429:20
92:11 94:7	423:23	627:6	362:22	430:4
245:9	442:12	practices	364:17	431:1
304:19	443:9, 22	221:18	predisposition	432:17
306:23	444:8	222:8	340:9	435:14
341:4	447:9	224:8 236:8	preeclampsia	467:22
343:8	493:6	Prader-Willi	466:7	470:13
344:2	578:22	316:24	467:19, 21	471:13
382:3	600:21	praises	468:1, 3, 11	484:8
		224:10	469:1	504:3
				506:5

510:4, 9	premutation	preparing	preserve	13:8 14:20
536:5, 24	298:6, 14	581:20	189:8	20:10, 21
597:6	PRENATAL	582:1	press 73:10,	23:21
598:13, 19	11:19	preschoolers	18 76:22	27:16 28:7,
600:13	16:20 17:7	185:16	78:21 80:2	15 75:23
602:13	23:7, 13	prescribe	90:5 196:8,	108:16, 21,
603:11	42:14 43:2	626:6 627:5	9 197:1, 9,	24 109:2, 4,
619:23	49:13, 24	prescription	12 258:23	17 110:2, 19
621:24	50:12, 16	500:2, 23	389:3	111:20
PREGNANC	51:8, 16	prescriptive	392:13	112:15
Y.PDF 31:8	68:22	214:11	393:10	113:10, 24
PREGNANC	75:23	presence	554:12	114:14
Y-	109:20	113:11	595:15	120:5, 21
HARVARD	275:7, 9, 23	285:15	596:7, 17	126:23, 24
30:21	349:9	377:19	597:11, 21	127:15
	365:24	PRESENT	598:24	129:7, 9
PREGNANT	367:14	8:1 44:9	617:15, 23	131:11
30:17 76:2	377:12, 17	282:2	618:6 622:8	133:3, 8, 14
79:20	378:11	294:11	pressing	134:19
80:15 87:3	386:22	414:2	439:19	135:14, 21
89:15	397:16	422:15	pressure	136:20, 23
90:18	422:20, 22,	424:10, 17	399:10	142:14, 20
93:22	23 423:16	425:1	467:20, 22	143:23
499:24	429:6	513:9 604:3	472:8, 12	144:23
510:2, 8	430:5, 21	presentation	pre-stage	146:19
598:17	431:10	252:18	417:12	157:16
599:1	469:11	253:15	Presumably	160:21
619:22	492:4	254:3, 4, 23	395:23	161:23
620:2 627:5	500:21	255:4	preterm	165:7, 16, 24
pre-	513:14	256:11	362:12	166:13, 18
highlight	521:17	270:16	423:12	167:2, 18, 21
185:4	533:9, 16	307:2	452:1	168:12, 18,
Prem	536:18	310:9 424:7	457:22	22 169:20
415:24	545:7 621:7		458:16	170:2, 16
416:23	prenatally	presentations	pretty	172:4
417:4, 14	375:13	200:24	41:24 67:2	178:15
premarked	376:18	presented	85:17	179:8, 11, 15
38:16	prepare	61:3	97:13	183:1
premature	624:6	405:23	262:21	191:5
451:21	prepared	594:10	297:5	193:21, 23
premise	371:5	presenter	471:15	194:4, 10
166:18	453:2, 5	41:8	506:9 536:1	198:1, 17
386:13	521:24	presents	PREVALEN	199:10
		316:20	CE 10:20	201:19

206:3	526:14	priorities	520:5	281:8
208:20	528:3	375:23	532:15	282:15
211:2	previous	388:16	537:8	286:2
220:12	55:2 78:13	616:11	probe	312:5
221:11	123:11	priority	247:24	448:20
223:17	196:18	349:20	408:11, 19	produced
227:21	219:18	privilege	409:1	36:23
228:20	233:14	583:18	490:13	310:20
230:17	381:2	probability	probes	484:19
233:3	526:6	232:19	291:22	producing
234:1	549:8	264:7 277:6	problem	337:4
236:11	614:24	probably	152:8	product
237:13	previously	40:22	180:10	583:17
238:2, 6, 22	82:14	102:9	280:15	625:16
240:7	209:17	106:23	541:5	Production
298:22	231:3	120:9	589:20	33:8
299:20	primarily	122:19	problematic	315:19
303:9	310:20	142:11	579:3	493:24
304:3	341:24	195:11	problems	497:9, 13
454:14	362:16	239:10	159:19	569:13
455:17	principal	257:3, 9	315:19	PRODUCTS
456:13, 18	400:18	260:6, 10	369:7	1:3 34:15
509:4, 8, 13,	print 394:19	280:14	458:12	253:13
18 581:21	printed	293:11	477:19, 20	534:15
582:2, 21	74:3, 14	294:22	597:19	556:2
583:4, 12	87:6	295:13	598:11	Professional
584:2, 7	148:24	303:3	PROCEDUR	1:15 636:13
610:11	149:6	326:20	E 27:13	professionall
611:4, 7, 8,	152:12	352:16	54:14 55:9	y 200:1
13 612:2	173:11	432:10	procedures	
613:2, 8, 14	599:21	433:1	456:23	professionals
630:2	printer 74:8	434:5	proceeding	200:23
prevalence-	Printout	441:13	631:17	professor
based 109:7	24:15, 18	447:8	process	75:5 81:9
prevent	595:23	460:11	252:6	99:4 241:8
135:4	prior 83:20	463:19, 20	374:10	619:9, 10, 24
500:5 530:7	231:7	465:16	507:7	profile
preventable	354:1	466:9	512:16, 21	377:13
534:19	400:16	470:24	536:22	profound
Prevention	488:19	475:9	processes	208:22
127:2	565:7	477:9, 17	55:16	programs
191:20	566:7	493:13	512:11	98:3
456:19	573:22	516:7	produce	proinflamma
	574:2 580:1	519:4	280:19	tory 472:16

project 375:4 563:5	416:15 433:9	provide 53:7 135:3	proxies 106:5, 8 180:9	515:23 534:2
projects 350:20	propounded 639:9	146:4 155:3	proxy 437:11	publications 39:15, 20 40:11 53:9
proliferating 422:3	prospective 456:21 525:13	157:18 165:22 166:11, 24	psychiatric 458:11	55:1, 15 63:15
proliferation 418:22 526:5	prostaglandi n 528:21	167:12 204:13 225:4	psychiatrist 35:13 626:6	72:12 83:20
prominent 290:23	529:5, 12, 19 530:8 532:4 538:7	507:4 521:24 526:9	psychiatry 128:12 178:16 369:17	146:13 242:4
promise 282:19 543:18	protected 427:4	544:1, 8 545:22 546:1	PSYCHIAT RY-WILEY 20:22	published 40:19 42:5, 19 44:5, 24 45:6 50:9, 19 53:13
prompt 72:13	PROTECTI VE 1:8	553:17 584:9 612:9	PSYCHOLO GY 20:22	55:15 62:19 63:6 77:17
prompts 439:20	330:12 334:13 335:3	625:5 629:1	Public 1:16	79:21
prone 305:20	526:12, 23 528:1	provided 38:7 39:2 58:13	31:15 75:5 79:14, 18 80:12	82:15 86:2 114:9
proof 165:14 301:22 544:9	protects 435:17	107:5 145:7 213:21	81:10, 20 82:14 83:7 101:11	122:18 129:16 130:4
proper 225:2	protein 281:7 295:6	222:12 225:22 395:10	143:17 176:24 259:18	141:11 147:5 148:4
properly 210:14 504:18	313:16 315:19 494:6	584:18	331:5, 6, 18, 21 332:1, 8, 9 334:5	150:6 151:17 157:17
propose 515:8 517:8	498:9 526:4	provider 426:1	501:2 602:8 636:14	170:5 171:19 178:16
proposed 515:11, 12 516:18, 23 518:15 530:1 537:24 604:11 611:21	proteins 104:14 493:24 494:2 497:10, 14, 22	provides 221:12 222:9 374:8 540:13	639:23 PUBLICATI ON 27:21 40:1, 5 84:14 86:1 89:13 170:3 201:5, 7 446:18 488:3	183:20 187:15 191:19 198:16 199:8, 15 200:14 201:14 228:4 241:15, 21 268:4
proposing 50:16	protocol 189:11 495:4	providing 94:10 313:9 479:8 629:12		
proposition 145:5	proud 97:13 prove 597:17 proven 598:8	proving 214:1		

289:23	485:24	154:21	quack 71:1,	153:5, 6
290:13	488:1	158:14, 23	5	154:7
346:19	502:11	180:16, 18	qualified	155:11
369:14, 16	pulled	188:17	472:10	156:15
382:14, 22	505:5	246:5	488:17	157:3, 21
442:11	557:18	269:2	501:6	161:19
445:18	pulling	296:12	535:13	162:13
446:11	38:10	308:14	quantify	165:10
447:4	373:11	321:1	169:8	173:21
455:20	PURDIE	348:23	quantitative	181:9
481:21	22:15	374:11	119:14	183:6
484:4, 21	351:23	390:24	quantitativel	188:15
486:10, 22	363:10, 24	403:8	y 119:21	192:1
490:15	365:15	406:22	377:21	193:7
515:11, 13,	471:22	414:5	quantum	198:20
14, 16 534:2	513:4	445:2	182:8	202:12
605:5	518:21	447:9	quarter	207:19
publisher	purely	460:7	233:7	209:9
41:10	200:6	461:24	queried	213:4
	purport	462:16	550:14	216:4
PUBLISHES	224:5	519:8	question	223:5
13:19	purpose	530:23, 24	47:5 53:15	238:17, 20
Publishing	134:17	534:13	59:10	246:2, 11
89:14	165:5	537:8	63:20	247:5
Puleo	552:9, 16	551:11	64:22	248:14, 21,
352:21	purposefully	557:3	78:23	24 254:18
353:10	53:20	568:16	84:24	261:1, 2
pull 38:17	purposes	571:20	85:23 88:6,	262:3
73:23	53:21	585:20	7 89:4	270:10
107:17	176:10	586:21	90:12	271:10, 18
135:16	212:22	587:3	95:20	274:23
147:8	592:6	611:11, 14	103:16	296:11
149:9	PURSUANT	617:18	104:9	299:14, 16
158:6	1:8, 13	629:17	105:4, 16	303:22
181:10	pursued	PUTATIVE	112:9	304:12
203:17	342:10	28:20	117:2	312:7
204:17	push 185:6	306:14	118:7, 16	315:4
206:15	362:23	putting	119:2	317:9
209:4	364:18	464:1 508:9	136:15	318:10
215:20	put 36:1	puzzle	137:2	320:7
305:16	57:5 62:14	393:22, 23	138:15	324:22
342:24	102:9		144:24	325:15
456:1	107:1	< Q >	145:1, 2	328:5, 7, 23
459:18	136:6, 13		147:16	329:8, 13

334:18	576:5	491:1	240:22	285:4
335:20	581:3	497:7	241:6	291:4
337:7	585:3	554:23	Quotient	293:7, 10, 14
347:1	586:24	559:23	547:20	294:7, 10, 18,
348:11	588:10, 16,	560:12	quoting	24 295:1, 10
351:8	19, 23 589:1,	577:24	127:17	303:2
352:7	15 590:3, 14	578:3, 6, 8	459:20	316:20
355:9, 13	591:5	592:19, 21	512:24	319:10, 23
361:6	595:4	593:14, 19		320:10
364:13	599:13	594:8	< R >	321:17
373:21	603:14	595:22	R&D 27:9	327:13
386:14	614:16	596:2, 6	radicals	rat 309:1
387:21	622:13	599:6, 23	480:5	437:3
390:19, 21	626:4	601:4, 9, 12	rails 568:10	439:22
396:16	631:3	607:8	raise 597:13	440:1
405:7	633:6 634:8	613:23	raised	RATE 19:8
418:6	questioning	615:18	78:13	30:9 73:12
433:22	55:7 76:8	617:1	91:18	118:10
445:22	365:6	628:10	198:23	120:18
447:24	559:20	635:10	334:20	127:16
448:7	595:14	639:8	raises 82:15	132:10
459:10	627:22	quick 321:2	raising	133:3
460:10	questionnair	490:24	335:5	136:20, 23
465:1	e 547:23	531:21	random	142:20
468:9	questionnair	593:14	188:9	168:12, 22
470:15, 21	es 547:13	612:16	189:22	169:8
476:8	Questions	613:23	272:19	170:2, 21
479:22	33:13	quickly	346:11	200:15
480:1	74:23	474:8	range 217:5,	201:19
483:1	76:12	quite 567:2	7, 12 218:19	237:6
486:16	82:16 87:9,	602:21	607:23	240:7
490:1, 3	15 88:24	609:4	ranking	241:12
495:18, 23	93:13	quote 75:20	67:2	265:14
496:6, 9, 15	116:17	78:3 80:2,	rankings	326:9
497:19	122:4	19 81:14	66:22 67:1	355:19
499:4	150:13	243:13	rapidly	456:23
520:1	152:20	434:11	568:10	509:8
527:5	153:3	619:3	RAQUEL	510:7
529:15	159:11	quoted	5:17	583:12
558:22	184:17	133:11	raquel.lucas	612:3
559:8	186:19, 24	243:19	@butlersnow	630:10, 13,
567:24	247:12	quotes	.com 5:21	20 631:5
569:10	331:16	73:22	rare 270:3,	RATES
570:22	409:2, 3	78:21	4 282:9	28:16

108:24	RAZ 13:15	189:10, 21	548:7	404:3
109:5, 8	56:3	196:12	558:15	504:19
110:3, 19	462:16	224:13	591:8	really 91:8,
120:21	463:23	225:7, 11, 14	596:21	22 154:3
129:16	reach	229:8, 15, 16	597:9	254:17
133:10, 12,	363:18	232:3, 13, 21,	603:24	302:11
13, 14, 18	592:9	22 241:3, 18	604:1	309:7
135:21	reached	243:4	624:9, 13	339:12
142:14	347:5 592:5	247:7, 14, 17	636:9	388:14
143:23	reactive	297:23	637:3 639:5	401:16
146:20	480:4	303:6, 14	readable	437:17
157:16	REACTIVIT	336:24	87:7	445:1
161:8	Y 16:14	342:7	reading	462:2
166:1, 14	546:22	343:15, 18,	37:2 78:20	527:18
167:3	read 43:15	21 346:12	154:12	541:1
172:4	44:13	354:5, 7, 15,	175:14	Realtime
191:5	46:24 47:2	20 355:3	178:19	1:16 410:3
199:10	49:20 50:5	371:10	188:9	636:14
266:23	51:1, 2	373:4	227:17	reanalysis
339:1, 2	62:17	375:20	229:13	230:9, 14
370:19, 22	68:19, 23, 24	377:24	230:23	reanalyze
509:13	74:21	378:4, 5	243:5	230:20
510:14	76:13, 21	379:23	403:14	rearrangeme
581:21	77:19	381:14, 18,	452:2	nt 255:1
582:2	80:23	21 395:11	533:21	rearrangeme
583:4	83:16	396:10	ready	nts 252:9
584:3, 8	102:8	397:24	306:11	re-ask
610:11	103:9	402:22	418:4	262:3
611:4, 13, 19	111:4, 5	403:2	448:1	355:12
613:2, 14	127:7	407:4, 7, 15	616:22	reason
ratio	129:14, 24	417:20	REAL 20:8	53:24 54:2
426:10	133:1	426:6, 23, 24	41:24	119:19
443:12	145:18, 24	428:14	71:23	120:7
470:7	155:16, 20	455:5, 22	109:11	166:21
605:22	157:23	456:4	224:24	223:4
ratios	158:10	457:2	301:24	255:18
444:12	172:2, 10	462:22	321:1	457:24
rats 419:16	174:23	486:12	440:13	533:24
437:3, 14	175:3, 8	510:5	490:24	609:20
438:4	177:22, 23	524:17	531:21	637:5
440:11, 15	179:17	525:9	realize	638:6, 8, 10,
441:6	181:21	530:16	203:21	12, 14, 16, 18,
540:19	184:17	531:12, 23	206:8	20, 22, 24
	186:17	532:13	394:21	

reasonable	178:4, 18, 19,	receptors	491:3	reduction
372:18	23 183:9	518:7	508:21	181:20
409:3, 5, 12,	185:24	recess 350:5	509:1	188:1, 5
20 452:15	187:4	recipient	513:3	194:4
486:5	195:6	393:6	585:13	refamiliarize
594:17	201:9	recognition	592:7	93:11
595:3, 6, 11	206:6	441:9	593:1, 5	refer 37:16
617:6, 11	223:21	recognize	635:15	71:16
620:5, 8, 12	225:19	283:19	636:6	135:14
reasonablene	228:7	321:10	records	reference
ss 486:4	234:11	recollection	58:12	40:21 71:8
reasonably	336:10, 21	60:9 72:13	180:7	137:6
621:9	362:4	85:3 86:1,	200:7, 8	138:8
reasons	441:12, 24	9 443:11	572:15	145:8, 11
116:7	531:18	recommend	RECORDS-	156:24
119:23	550:10, 15	93:22	REVIEW	161:21
120:17, 21	563:13	recommenda	13:7	172:17
133:21	578:7	tion 137:18	red 492:3	175:6, 16
134:3	595:18	202:8, 15, 22	499:22	182:5
135:13	596:2, 5	203:8 434:2	500:18	197:22
136:18	599:13	recommende	610:15	201:12
166:20	601:8	d 202:3	redacted	211:20
408:20	610:17	recommendi	583:17	212:7
471:1	614:23	ng 201:14	redaction	213:7, 10, 12,
477:10	615:6 617:3	598:21	583:20	20, 21, 24
610:5, 6	recapitulate	record 34:3,	Redefining	214:20, 24
REBECCA	544:13	19 67:22	192:16	215:8, 9
4:7	recapitulates	123:1	redialogned	216:17, 19
Rebecca.king	544:14	134:8, 12	209:24	220:18
@kellerpost	receipt	146:12	redlines	223:3
man.com	637:17	154:21	445:12	235:18
4:12	receive	173:9	reduce	236:5
rebut	561:3	176:6, 15, 21	92:12	341:10
530:12	received	188:17	387:5	459:2 586:6
recalculated	426:15	218:4, 8	429:7, 24	referenced
160:9	554:4	276:16	430:6, 19, 22	86:4
recall 60:12	562:24	308:14	431:17, 20	140:13
102:2	563:4	331:6, 21	432:11, 18,	349:10
105:13	564:13	332:1, 10	24 435:23	487:20
127:24	615:8	334:5	reduced	586:9
146:24	RECEIVES	350:3, 10	193:23	references
158:4	24:7	389:20	reduces	41:8
171:21	receiving	410:24	425:11	100:20, 22
174:24	475:18	411:4	427:8 431:2	101:1

103:17	155:1	21 501:6	367:3, 5	598:24
142:15	352:22	627:4	388:4	617:15, 24
212:4 307:9	refusing	REICHENB	389:24	618:7 622:8
referencing	588:23	ERG 13:14	391:18	releases
77:23	589:5, 8	23:12	414:3	78:21
102:14	regard 56:5,	52:14 56:7,	479:15	595:15
143:21	12 125:17	19 57:5, 13,	480:4	596:7, 17
346:15	126:10, 11	17 71:20	481:6	relevance
referred	243:15	109:23	517:9	301:24
585:19	regarded	128:22	598:24	406:1
601:13	612:23	129:1	613:9 621:7	560:14
referring	regarding	274:6	RELATION	relevant
110:13	613:1	347:7, 14	16:17	88:21, 23
175:7	621:23	348:17	187:13	89:2
324:17	regardless	358:6	relationship	103:24
326:2 521:5	447:10	464:4	299:4	119:16
refers	region	571:1, 7, 18	303:7	212:1
197:22	317:16	REICHENB	442:15	378:3
513:17	522:20	ERG-2007	460:14	434:1
reflect	523:9	11:19	516:11, 17	519:23
111:1	regions	relate 608:5	521:19	525:23
113:11	522:20	634:11	623:9	reliability
385:4, 11, 16,	523:8	related	626:23	548:6
19 466:5	Registered	60:23	629:2	reliable
526:10, 21	1:15 636:13	125:3	634:13, 19	248:9
527:23	regret 53:6	298:5	635:6	508:4, 10, 13
528:15	55:20 62:3	377:21	relationships	585:22
532:20	regulate	429:21	516:19	586:7, 16, 21,
611:1	381:11	477:22	553:17	22 587:1, 5,
reflected	420:9	526:4	relative	16 589:4
623:17	regulates	532:5	458:19	590:4, 10
reflection	380:17	535:19	relatively	reliably
257:10	382:4	568:7	229:5 480:3	244:13
reflective	regulating	RELATES	release	286:22
610:22	384:11	1:5 68:12	73:10, 18	294:5
reflects	regulation	105:21	76:22 80:2	347:4
111:6	420:15	111:20	90:6 196:8,	535:23
120:20	517:10, 12	119:15	9 197:1, 10,	536:2
166:7	regulatory	135:6	12 258:24	589:13
465:10	226:9	146:16	389:3	603:17
494:11	493:24	163:6	392:13	reliance
608:18	494:2	254:12	393:11	193:6
refresh	497:10, 13,	304:18	554:12	259:17
152:19		339:12	597:11, 21	

RELIEVER	17, 21 567:2,	150:6	522:18, 24	
30:21	4, 22 568:1	151:17	523:12	Representing
86:19 597:6	576:16	248:9 548:3	528:17	2:12, 17, 24
relievers	578:4	REPORT	533:22, 23	3:6, 12, 19
80:14	584:17	24:21	537:9	4:12, 19
rely 160:1	593:19	37:17 71:7	538:9	5:7, 14, 21
212:19	610:12	81:2	548:13	6:7, 13, 21
relying	621:15, 16	106:22	549:8	7:6, 12, 17,
145:15	624:8	107:4, 13, 22	581:21	23 146:15
197:7 243:7	remove	108:1	582:1, 21	400:1
remain	494:4	119:22	583:3	614:11, 18
50:22	497:23	120:15, 16,	584:2	615:4
355:5	reordering	20 127:10	607:22	represents
416:19	291:19	135:15	REPORT-4-	270:6
508:13	repeat	136:18	83.PDF 10:7	reproduce
remaining	63:19	137:4, 13	reported	449:16
268:22	145:2	138:10, 12	132:11	reproduced
586:3	156:14	139:7	133:3, 18	471:18
remains	271:10	140:2, 12, 14	136:20	Reproductio
345:12	299:15	142:15	160:1	n 99:17
377:7	311:3	145:17	179:14	636:20
536:14	351:8	155:21	182:3	
606:24	390:20	156:6, 19, 24	201:4, 7	Reproductive
remarkable	396:15	157:7, 10	242:14	78:9 99:12
241:12	454:20	164:1, 2	456:18	353:18
remarkably	514:22	166:3, 7	Reporter	Republic
301:16	repeats	171:23	1:15, 16	7:9
remember	296:21	211:17	34:20	reputable
178:5, 24	repel 494:3	212:8	636:13, 14,	383:1
229:24	497:22	213:5	22	reputation
232:12	repercussion	233:19	reporting	66:10
262:9	s 591:10, 13,	234:10	242:22	89:11 97:3
322:2	19	242:18	reports	reputations
357:15, 18	replacing	258:14	400:16	67:9 96:1
365:14, 16,	168:15	261:9	402:17	Request
17 398:7	169:12	285:3	624:10, 11	33:8 37:15
403:3	replicate	411:11, 21,	represent	374:18
456:10	540:17	23 414:7	226:3	590:8 591:7
488:22	542:24	415:4	334:13, 23	requested
502:13	replicated	416:7, 10, 11	341:23	636:6
511:3, 6	76:1	453:6	444:16	require
563:7	146:22	454:2	represented	239:10
565:10, 11	147:5	517:14	60:21	282:13
566:10, 12,	148:4	518:13	343:11	500:3

required	373:19	residency	303:7	responding
54:16 55:4	374:13	128:20, 23	307:13, 15	496:15
551:8	375:4	129:3	336:23	responds
552:10	381:2	resident	347:10	380:20
requirement	388:9	128:11, 16	360:24	575:10
144:9	393:8, 11	461:17	372:7	RESPONSE
	394:10	RESIDES_W	379:5	11:13, 14
requirements	397:15	ITH_COMM	383:4	37:15, 19
226:9	400:10	ON_V.PDF	384:6	227:19
requires	403:11	15:19	388:6	228:4
144:7	408:6	resistance	398:24	279:5
rescue	529:4, 16, 18	545:9	420:16	378:15
440:16	534:17	RESIZE.PD	445:5	402:9
rescued	550:19, 24	F 24:14	450:17	412:12
301:17	551:1	resolution	494:15	584:23
440:20	552:13	291:21	495:13	responses
	564:14	292:5	524:22	37:14
RESEARCH	597:22, 24	320:19	529:5, 18	
23:17 27:9	598:9	resolve	538:7	responsibility
31:12	603:9	147:3	550:12	54:5 461:18
32:11	604:6, 8, 13	148:2	573:17	responsible
44:12	615:19	150:4, 14	619:1	241:11
52:17	634:12, 19	151:15, 23	622:23	242:13
56:23 66:8,	635:6	respect	628:20	342:4
11 67:3	RESEARCH	48:17 56:3,	629:16	505:13
69:23 70:1	ER 30:17	15 57:17	635:1, 6	rest 106:24
80:16	56:11	58:4 68:21		262:11
82:15, 17	69:23 70:2,	71:10	respectability	333:7
83:5, 8, 19	16 79:2, 19	75:10, 11, 14	81:24 82:2	395:18
90:9	81:19	78:24	respectable	restriction
101:12	83:10 88:2,	114:13	593:24	423:13
124:13, 15	12 124:10	124:7, 8	594:4 617:1	result 161:3
128:14	125:16	126:17, 20	respected	168:14
130:6	126:11	128:10	71:19, 21	174:8
147:6	128:10, 13	129:7	79:2 81:19	210:24
148:5	244:1	133:17	126:2	245:24
150:7	RESEARCH	140:11	respectfully	246:14
151:18	ERS 19:9	142:13	188:5	428:22
244:3	65:17	156:2, 11	479:22	resulted
295:20	66:12 68:3	157:22	529:14	181:19
349:20	73:14 83:6	168:2	respond	182:1
350:15	124:20	206:2	495:21	resulting
354:4	128:19	258:2	576:3	526:24
361:23	242:9	285:12	587:23	

results 82:9	RetroVirox	465:3, 4, 10	RICAURTE	119:10, 24
117:5	561:1, 13, 15	473:8	29:10	120:19
179:10	Rett 315:6,	484:4	297:21	122:17
180:15	16, 18	503:13	right 36:7,	124:11, 22
207:12	return	516:6	12, 18 37:6,	127:7, 16
221:15	283:8, 14	538:15, 18	18 39:16	128:16, 24
254:1, 22	637:15	598:3	40:3, 8, 10,	129:14
271:6	REVEAL	604:17	13, 20 42:20	131:5, 17
295:5	25:15	605:14	43:5, 21	133:4
315:18	344:10	610:21	44:2, 18	134:5, 7, 11
316:6	382:6 616:1	REVIEW.PD	45:19 46:1	137:7, 15
346:4	revealing	F 15:16	48:1, 8	138:20, 24
370:18	331:16	reviewed	50:5, 13	140:7, 8, 13
373:6	reversal	171:15	51:17 55:5	141:18
428:1	437:20	350:18	56:1, 8, 23	142:6, 8, 9,
443:5	438:2	584:6	57:3, 21	12, 16, 21, 24
459:16	reverse	621:20, 21	58:6 60:1	143:4, 18
465:20	543:11	REVIEWED	62:8 64:6	148:20
471:11	reversed	-84-150.PDF	65:19 66:3,	150:17, 21
473:7	437:15	10:10	20 67:16	151:5, 21
513:19	reversing	reviewing	70:13	153:16
523:15	309:16	163:8	71:14, 21	155:21
526:8	review 44:4	182:10	73:15, 20	157:19
545:10	68:24	revise	75:7, 10, 15	164:24
548:2	87:14	486:18	76:6, 20	165:2, 4
586:19	100:13, 17	revised	79:15, 22	169:5, 8
615:21	109:21	167:23	81:13, 22	171:20
634:10	116:18	485:14	84:7 86:9	180:5
retained	122:4	507:17	87:19	190:19
406:24	134:18	revisions	88:15 89:6,	201:16
409:11	147:9	140:21	18 90:7	202:4
580:11	153:13	reward	91:9, 22	203:16, 24
592:8	155:1	440:2	93:6 98:9,	204:15
615:3, 10	177:7	Rexrode	15 99:14, 18,	205:18, 23
622:10, 15,	178:6	87:20	24 100:6, 14,	207:1, 14, 21
16	181:13	88:11, 20	23 103:15	210:1, 9
retardation	187:15	91:8, 11, 23	106:15	211:13, 19
311:1, 6	188:11	92:18	107:14	212:3, 18
retention	205:12, 13,	Rhyder	108:18, 20	213:13
615:8, 9	17 207:18	511:8	109:5	214:1
retract	343:9	rhythmicity	110:6, 15	216:11, 15,
230:20	346:15	381:12	111:15	20 217:2, 13,
retread	414:10	rhythms	114:16	17 218:3, 7
132:6	447:7	398:14	115:23	219:4, 8

Confidential Subject to Protective Order

220:20, 22	8 303:2	375:7, 20	443:23	538:3, 6, 14
221:22	307:6, 11	376:7, 12, 13,	444:10	540:7
222:5, 12	310:14, 18	20 377:24	446:9	542:7
223:4	311:2, 17	378:4, 11	448:3	544:1, 9, 18
225:23	312:13	380:24	451:8, 17, 22	547:16
227:1	313:17	381:7, 14, 22	452:19	548:15, 23
235:8, 10	315:20	382:15	453:1, 20	549:4, 23
236:14	316:3, 8, 9,	385:2, 12	454:17	550:20
241:15	14 317:5, 10,	386:1, 17, 24	457:2	552:14
242:5	16 318:4, 12	387:19	459:17	553:24
244:20	319:18	392:19	460:2	556:3
245:14, 24	320:2, 16	393:3, 8, 14,	462:5	557:4, 24
246:9	326:18	22 394:14	464:7	559:18
248:16, 19	327:2, 16	397:19	465:7, 14	560:23
249:6	328:14	398:23	467:20	563:19
250:13, 23	331:12	399:2, 7, 21	471:13, 16	564:12
252:18	332:15, 17	400:12, 20	472:5	568:17
253:16	333:3	401:2, 24	473:6, 18	571:24
256:12	339:13	405:18	474:2	573:23
257:1, 8, 14,	340:3, 10, 19,	407:5	486:8	575:11, 16,
17 258:7	23 342:7	408:21	489:13	20 576:1, 2
259:19	343:15, 18	410:23	491:12	578:16
260:5, 20	345:4	411:3, 18	492:17	580:9
261:9, 14, 21	346:9, 24	412:4, 10, 12,	497:7	581:6, 13
262:18	347:10	24 413:7, 15,	501:8, 12	582:8, 17
263:12	348:21	19 414:2, 9,	502:23	583:7, 13, 24
264:20	350:2, 9, 22	15 415:9	505:11, 20	584:3, 13
265:4	355:6, 21	417:17	508:20, 24	586:17
266:2, 15	356:4	424:2, 8, 24	509:23	592:24
267:2, 8, 15	358:7, 10, 17,	425:3, 12, 17	510:10	593:4, 24
269:7, 24	23 359:5, 23	426:6, 23, 24	511:1, 16	594:1
271:12	360:1	427:13, 22	512:3, 14	600:4, 5, 7
274:13, 21	361:4	428:14	514:8, 21	601:24
275:12, 20	362:1, 14	429:1, 19	516:4	608:9
280:7	363:1, 11	430:18	517:21	617:3, 7
284:21	364:14	431:7, 11, 14	518:9, 17	618:1, 17
285:9	366:3	432:12	520:14	619:4, 14, 15
291:19	367:17	434:5	521:6, 8	620:3, 8, 20
292:1, 2, 5,	368:5, 7	435:15	523:13	621:4, 24
10, 14, 17	370:9, 13	436:7	524:2	622:11
293:9	371:19, 23	438:18	525:24	624:11, 15
295:2, 3, 7,	372:3, 8, 16	439:2	531:1	631:18
11 300:8, 13,	373:4, 14, 19	440:9	532:7	632:20
18, 23 302:4,	374:7, 17	442:8, 18	533:10	635:2, 14

Rightfully	113:12	434:23	620:2	312:20
626:19	134:22, 23	435:1, 7, 14,	625:14	346:23
right-hand	135:5, 9, 11	19, 23	627:11, 19	347:3
290:6, 8	216:14	441:21, 22	RISKS	353:22
505:3 572:6	218:13	442:6, 17, 22	30:13	366:1, 23
rigor	244:11	443:7, 20	31:13	367:15
118:24	261:14, 20	444:6, 15	101:13	385:21
338:3 591:3	272:1	448:17	259:16	397:6
rigorous	273:20	457:4, 9, 18	350:22, 24	420:14
456:22	274:7	458:10, 20	351:3 599:4	428:3
ring 105:12,	280:7	459:16	Ritz 97:21	446:13
19 301:13	289:10	464:20	Riverside	468:12
511:12	294:20	465:6, 13, 23	4:8	476:1, 2, 23
566:2	343:13	467:17	RNA 103:19	478:6
rings 382:6	347:5	468:6	Robins	517:20
RISE 12:14	348:2	469:12	173:24	519:17
115:8	350:16	470:13, 18	174:4	527:17
134:18	351:11, 21	471:2, 7	robust	528:16
194:9	361:3	473:4	50:23	533:9, 16
205:21	362:10, 11,	475:4	Roche	536:12, 19
206:3	18, 19	476:15	563:3	631:14
237:13	370:22	477:23	564:8, 9, 12,	632:5, 16
367:1	376:2	482:16	18	roles
Risi 138:20	378:24	484:8	ROGER	420:12
RISING	385:22	487:11, 23	2:14	487:17
20:21	387:4, 6	501:10, 16	roger.smith	ROMANO
28:15	394:13	502:5	@beasleyalle	4:5
610:10	397:17	506:6	n.com 2:16	room 38:20
611:13	399:7, 20	511:22	Rogers	rose 117:7,
RISK 10:16	400:3	512:6, 9, 12,	172:24	10
11:20	418:10	22 513:17	173:17	ROSEANN
13:14 23:7,	420:14	515:21	176:6	4:5
13 42:15	422:16	516:12	177:12	roseann.rom
43:20	423:11, 16,	522:22	ROLE	ano@kellerp
44:10	22 424:18,	523:10	12:15 43:3	ostman.com
45:17	22 425:2, 11	524:8, 15	51:9 83:9	4:11
46:16, 22	426:4, 20	526:12, 23	111:3	rough
50:3, 15	427:8, 12, 21	527:1, 14	115:9	402:24
51:16	428:13	528:1	198:14	624:14
68:14 77:8	429:7	538:8	205:21	roughly
78:16	430:1, 6, 19,	603:2	273:7, 14	379:9
82:20	22 431:2, 18,	604:4	274:13, 17	403:22
85:13, 19	20 432:12,	605:2	275:4, 6, 18,	509:13
109:21	18 433:1	609:17	24 308:8	

routed 560:8	safety 45:8 82:16	324:8 343:23, 24	171:3, 7, 12, 23 175:9	389:3 393:9, 11, 16
routing 559:15	Saldarriaga 297:19	352:16, 17 370:18	186:4 187:24	402:13 418:8, 19
Royal 556:7	sales 556:17	408:12, 13	193:17, 20	422:14
royalties 556:1, 11, 15	Sam 2:21	434:19, 21	196:14	423:21
ROYALTY 24:8, 12, 17	sample 164:13	441:14	197:14	424:9
554:5, 20	284:1, 3	463:8, 16	206:9, 12	427:9, 19
555:23	324:17	470:23	207:12, 22	443:4
558:7	samples 77:10	476:6, 11	209:4	456:12
rubella 471:10, 12, 20	232:17	530:13	210:23	458:7, 19
Rudolf 358:2	382:2	579:22	219:15, 21	470:3
Rule 37:17	420:4	596:24	221:10	484:3
39:3 54:15	550:15	605:24	224:4	487:15
61:15, 22	San 2:9	615:7	228:12	491:11, 12
63:13, 23	97:12	625:11	233:22	493:20
64:5 402:11	Sandin 346:20	says 37:20	234:6	495:4, 6
RULES 27:13	358:9	44:8 45:6, 15 46:12	241:10	500:18
54:13 55:8	SANDRA 6:16	49:11	242:9, 18	504:2
147:3	SANFORD 2:5	50:10, 20	243:1, 20, 22	506:20
148:2	saw 129:23	51:7 64:19	259:23	515:19
150:4	437:19	73:16	268:18	525:21
151:15	580:10	74:21	269:8	526:1, 16, 17
run 325:4	626:11	75:22	276:3	532:3
running 118:19	saying 50:15	78:12	279:18	534:13
rural 298:8	60:19	79:12	284:19	536:17
Rutter 138:19, 23	142:19	80:10 81:1, 8, 15 82:13	285:14	538:9
	182:1	87:2 89:14, 24 91:6, 8, 11 92:8, 18	290:9	556:4, 9
	199:8	93:24 94:8, 12, 13 99:19	292:14	575:1, 16
	200:15	102:18	323:2, 16	597:8, 24
< S >	203:22	104:17	341:8	598:9
S.PDF 30:9	225:23	107:24	344:18, 23	599:24
sad 441:18	226:4	108:3, 19	355:15	602:7
SAFE 30:21	232:5	110:2, 23	360:7	603:8
86:20 597:6	261:11	117:6	362:7, 16	604:24
safeguards 500:4	262:6	121:4	365:22	612:18
	272:16, 22	131:11	367:12	619:22, 24
	316:12	134:18	369:14	626:22
		153:18	375:11	627:9
			377:9	632:17
			378:7	Sburke@dua
			380:3, 22	nemorris.co
			381:2	m 7:23
			382:2, 5	

scale	science	610:21	131:16	searches
185:20	75:11, 15	611:23	148:20	84:6
420:4 547:2	97:12	613:5, 11	150:1	searching
scenarios	119:1	615:19, 22	155:12, 17	388:2
337:3	124:19, 21	634:10, 12	158:14, 24	Seaside
477:13	286:24	635:5	202:22	562:23
Schedule	287:12	scientifically	204:4, 6, 14	563:1
139:22	387:22	615:16	288:3	Seaver
549:4, 20	507:6	scientist	289:7	396:22
578:10, 13	536:22	57:14	345:15	397:1, 7, 13
580:3	542:6	70:18	394:21	425:15
SCHOOL	544:3	71:19, 21	395:3, 4, 8	428:10, 15
31:14	613:17	75:17	396:13	505:8 551:1
66:13 67:3,	616:4, 7	126:18, 21	398:22	sec 100:8
11 68:4	617:6	320:22	466:2	second 38:5
75:6 78:8	623:20	352:21	514:14	40:24 41:1
79:14, 18	Sciences	370:13	532:11, 24	42:2, 18
80:12 81:9,	81:11	380:23	547:21	63:4, 18
20 82:13	SCIENTIFI	382:13	551:12	69:13
83:7	C 12:19	383:1, 6, 10	572:14	72:16
101:11	61:23	496:14	575:10	93:19
172:24	68:11	595:7, 12	629:18	94:19 95:9
200:7, 8	79:13, 17	617:12	screened	101:3, 20
247:16	94:16	620:12, 19	203:24	102:7
396:23	120:4	621:4	screening	103:9
488:20, 21	143:9	SCIENTIST	201:15	108:7, 15
489:17, 20	144:22	S 28:11	202:3, 9	109:18
512:3	146:2, 15	68:20	203:13, 24	110:8
593:24	162:1	80:11	204:9, 13	115:2
596:1	167:22	301:2	210:13	116:12
619:4, 10	198:22	370:17	547:14	131:18
622:7	199:18	372:15	548:9	136:7
schools	213:9	595:3	screwed	156:3
65:18	214:5	613:21	152:5	159:6
66:15, 19	226:4	620:8	scroll	170:15
67:8 72:16	361:13	Scioto	395:19	181:7
79:3 81:21	382:14	562:20	SEAN 3:14	184:2
82:4 88:13	457:18	scope	7:20	192:9
89:9	479:18	503:12	search	193:11, 15
143:17	480:22	558:14	55:17	219:11
489:18	486:11	scratch	502:21	221:8, 9
Schultz	490:17	393:16, 24	searched	240:24
97:5, 6, 8, 15	493:2	screen 36:1	570:9	263:3
	594:19, 22	43:8 74:13		268:22

274:9, 21	513:22	108:2	288:16	523:5, 20
297:24	545:13	117:6, 22	289:12, 13	525:15
305:14	Secondly	118:3	290:22	529:1
308:12	160:17	131:14, 15	291:17	531:7, 10
323:12	section	136:3	292:8	532:7
326:9	40:11	139:5	298:1	543:10
341:17, 23	44:24 45:3	149:1, 24	310:9	545:21
343:2, 3	121:21	150:3, 12	319:17	547:3
346:3	166:6	151:7	320:14	553:20
358:19	374:4	153:18	322:12	554:19
365:21, 22	411:23	154:4	323:16	556:20, 23
375:17, 21	412:3, 6	155:12	333:24	558:2, 9
398:7	423:10	158:15	337:9, 12	570:24
410:19	426:8	168:9, 12	345:4	571:3
414:6	430:14	174:10, 11	355:14, 17	572:13
415:1, 12	446:12	176:11	360:4	574:24
416:4	595:24	177:5	365:5	575:13
422:12	600:7	182:14, 15	369:19	581:22
425:10	601:24	183:7	379:21	585:5
430:14	section-by-	186:10, 24	380:8	588:12
436:11	section	187:3	382:8, 9	602:5, 14
444:4	414:8	188:15	384:6	606:17
448:9	sections	195:15	387:16, 17	608:2
452:4	252:8, 9, 10	196:20	389:7	611:24
460:22	255:2	197:3	392:22	623:14
461:8	413:1 602:3	198:13	394:19	630:14, 22
462:6, 10	securing	215:21, 24	407:10	seeing
482:3	390:14	216:11	411:15	102:2
484:17	see 36:24	217:10	417:14	185:18, 22,
492:24	37:14	219:14, 20,	422:14, 18	24 187:4
505:19	39:14, 20	21 220:15	430:12	212:20
516:3	42:6, 13	234:5	441:20	225:19
523:19	43:8, 12	242:4	443:17, 18	406:10
531:4, 23	45:12	245:10	453:11, 12	588:20
533:7	54:18 55:3	249:2	464:20, 22	seek 118:22
547:19	73:6 76:10	251:10	466:3	373:18
563:9	80:18	260:2	468:21	seeking
569:12	86:21, 22	262:6, 7	482:3	348:18
570:12	95:7, 11, 24	268:8, 24	491:17, 18	376:16
571:21	96:7	278:4	494:10	seen 63:2
581:5, 11	101:18	283:11	502:12	87:13
619:5	102:13	284:4	504:5, 12, 15	102:20
secondary	104:7, 8	286:5	505:5	104:22
407:2	106:11	287:23	519:14	116:15, 23

117:4, 15	selected	117:21	sequencing	seven-times
118:14	395:8	170:15	103:19	119:9
122:6	selectivity	207:11	292:1	SEVERITY
162:19, 22	485:7	230:23	293:5 420:5	29:8 46:16
163:9	send 615:7	269:3	series 82:17	297:19
173:13	624:22	274:9	219:15	298:3
178:2	senior 75:3	275:19	601:8	487:12
185:23	460:24	276:1	serious	SHANK3
186:13, 15	461:4, 5, 11,	290:8	386:5	300:8, 22
187:20	14 525:17	343:2, 3	460:10	301:11
188:12	sense	345:7	472:8, 10	302:7, 16
190:3	130:16	355:3	500:18, 20	303:1
191:18	252:11, 12	393:15	seriously	305:1
192:2, 13, 18	253:3, 9	427:23	81:7 384:2	307:14
195:4, 19	271:18	499:22	serotonin	308:1
196:2	406:4, 5, 15	549:15	536:7, 12	309:10, 12
197:13	446:15	598:23	served	310:5
205:23, 24	459:4	603:22, 24	490:11	437:14
223:19	470:17	604:2	service	438:5
225:17	476:1, 22	606:22	228:14	440:13
226:24	516:23	sentences	SERVICES	Shanna
228:3	521:14, 15	188:9	1:19 34:6	75:4, 8
229:21, 23	632:23	189:22	204:12	93:18
232:9, 11	Sensible	346:12	212:23	98:11
240:10	87:2, 10	397:21, 24	214:8, 10	570:17, 24
263:15	89:14 90:8,	486:1	231:10	571:8, 16
306:16	17 598:15	522:13	375:3	575:15
317:20	sensitized	596:8	session	577:17
445:14	210:11	597:10	433:19	619:4, 13, 21
456:8	SENSORY	separate	set 184:11	620:20
463:6	16:13	577:11	186:4	621:5
515:10, 12	546:22	580:22	224:19	623:17
530:22	547:1, 12, 14	612:23	seven 119:8	shape
533:4	sent 59:23	separated	209:18	493:19
552:18	60:3, 5, 18	581:1	210:1, 8, 16	shaping
579:2	152:4	September	370:16	494:8
sees 323:3	284:1, 3	1:8 34:8	372:14	498:11
Segue	570:13, 21	79:22	628:11, 13	Shapiro
568:12	579:21	539:23	Seventeenth	40:18
seizure	580:3	588:6, 8	7:10	share
301:14	615:7	636:15	Seventh	214:24
seizures	623:17	637:2	5:18	265:6, 9, 11,
301:16	sentence	sequence	seven-time	21, 23
	51:3 110:2	577:16	119:20	

319:15	show 72:11	showed	SHUSTER	signature
329:19	83:18	61:14	4:14 5:1	314:8 346:8
shared	109:9	183:7	sibling	SIGNATUR
346:8	114:1	185:23	336:24	ES 25:15
361:22	125:12	268:19	337:14	314:14
sharing	130:3	304:8	338:6, 15, 20	344:9
265:19	131:17	330:5	339:5	signed
sheet 637:7,	133:2	331:12	473:16	68:20
9, 12, 15	148:9	332:14	siblings	95:15 452:8
639:12	165:6	335:14	265:18	significance
Sheldrick	168:23	466:8	326:9, 10	155:18
203:10, 12,	176:19	481:15	sic 46:14	significant
21 204:11	215:19	484:19	91:17	50:24
205:9	216:21	599:16	99:12	85:13, 19
SHELLY	240:13	612:18	176:7	346:23
2:5	267:20	621:12	240:20	377:20
shift 160:13,	276:7	showing	side 330:17,	443:19
15 222:8	301:3	55:7	23 331:4	444:14
242:16, 19	303:14	165:23	404:9	466:6
shifts 226:8	304:2	166:12	491:12	470:5
236:22	336:6	167:1, 13	502:4	513:21
ships 322:23	351:22	190:24	530:24	536:3
shocked	364:4	191:1	579:4	545:12
255:22	379:11	398:9	sides	603:9
shocking	398:12	454:13	190:24	significantly
255:11	411:10	538:12	407:3	266:3
612:7	425:14	600:16, 20	sign 590:6	signing
Short 8:12	430:24	shown	591:8	637:10
41:24	431:4	114:14	636:9 637:8	signs 384:1
134:9	455:3	457:11	signal	silver
218:5	465:16	545:7	496:24	214:12, 20
243:24	466:10	595:13, 15	signaling	similar
311:16	471:9, 21	603:18	514:2	275:1
411:1	503:18	610:8	528:21	310:17, 19
423:14	511:14	613:11	529:6, 19	314:21
508:22	538:24	shows 36:4	538:7	325:2
593:2	539:21	84:13	545:11, 17	382:5
604:24	544:17	165:14	signals	615:17
606:8	546:4, 14	167:16	493:22, 23	SIMPLEX
shortest	554:10	203:13	495:15	14:8 353:8
92:11, 14	595:21	371:17	496:11	Simplificatio
94:6	601:22	420:6	497:5, 12	n 546:24
shoulder	602:3, 4	428:19	signatories	simplify
511:10		609:3	96:6	398:17

simplistic	427:9	540:12	419:21	slipped
372:9, 13	489:3	632:13, 20	453:9	55:21
simply	503:20	sir 36:24	550:10	small
203:22	504:1	42:6 55:11	situ 292:20	165:13
400:6	505:9	86:21	situation	238:10
simulation	508:7	104:7	57:19	302:21, 23
159:2, 13	550:19	112:23	253:24	394:22
160:14, 18	551:19	117:22	434:21	471:17
simulation's	552:4, 20	136:3	situations	smaller
160:22	553:5, 15	150:1	91:7, 21	160:12
simultaneous	554:4, 12	154:15	305:22	161:7
ly 579:5	558:18	168:9	six 104:1	SMITH
SINAI	560:9	182:14	203:3	2:14
13:17	594:3	186:10	209:18	Smith-
17:11	599:6, 11, 22,	196:20	210:1, 8, 16	Magenis
18:14 19:9	24 612:17,	201:8	280:15	317:18, 21
24:7, 9	18 613:3	234:5	286:11, 19,	smoke
25:11, 12	617:15, 23	241:21	22 287:5	429:20
26:11, 12, 15,	618:6	332:15	605:18	430:4
17 27:10	619:21	354:16	size 404:20	450:13
56:8 57:15	SINAI-	360:4	405:21	smoking
66:2, 17	20180110	365:4	406:8, 18	450:5
67:15	30:7	380:8	409:20	475:3
69:20 72:3,	SINAI-	382:8	SKADDEN	476:15
12 73:7, 10,	CLINICAL	404:18	5:9 592:15	477:11, 14
13, 17, 19	31:19	491:17	skepticism	628:21
77:1 98:9,	SINAI-	523:5	623:18	629:3
15, 16	JANECKA.P	547:3	skill 305:24	snapshot
123:15, 21	DF 32:7	586:11	skills 547:24	380:15
258:24	Sinai's	587:3	sko@btlaw.c	SNIDOW
325:1	72:24	sister 265:6	om 6:20	4:6
347:8, 16	393:6	sisters 267:1	SLATE 5:9	snips 290:19
357:24	505:9	sit 630:8	Slide	SNOW
358:7, 10, 13	534:1	site 618:19	285:13	5:16 58:22
369:10	600:24	SITES	323:15	59:21
370:9, 11, 13,	single 83:18	20:14	324:2, 16	84:15
16 372:15	198:16	179:6	403:4, 15, 19	572:20, 21,
378:14, 23	199:8	546:13	405:8, 24	23 573:21
380:24	211:7, 9	sitting	406:17	576:9
382:13	213:1	215:7	409:7	577:3
383:11	214:23	237:9	slideshow	579:12, 21
389:2, 3	282:11	239:12	324:9	580:7
392:8, 14	302:19	332:21	slight	583:10
393:10	368:8, 22	348:3	232:16	584:1

622:22	141:15	237:2, 3	559:16, 17	576:17
623:21	151:9	249:24	597:1	607:20
so-called	153:21	251:3	sources	speaks
93:5	156:14	280:19	312:12	532:17
335:21	180:2	281:6	634:9	special
411:17	184:3, 19	282:7	South 7:15	222:4, 7
569:6	217:9	283:5	565:2	specific
social 441:8	258:23	301:22		46:15
505:14	260:8	302:10	SOUTHERN	65:20
547:24	263:24	316:10	1:1 411:16	143:12, 21
society	267:11	327:22	631:17	160:3, 4
137:5	277:21	351:16	space 637:6	168:1
sodium	287:16	373:23	SPALDING	169:3
501:10, 15	289:2	391:18	6:3	174:22
Solander	298:18	441:9	Spanish-	194:11
337:1	311:3	462:9	speaking	199:14
sold 74:9	321:12, 23	466:11	204:13, 15	256:24
somebody	342:14, 24	467:24	Spanish-	279:20
62:13	347:23	474:7	speaking-	296:11
132:7	384:23	478:9	only 205:16	309:13
243:6	410:7	480:4	SPARK	315:3
245:13	429:9	481:16	32:10	323:7
254:1	435:5	540:5, 17	130:5	327:20
451:3	451:1	542:1	283:9	338:11
477:13	453:19, 20	574:9	326:3, 4	340:14
572:19	488:11, 13	607:3 610:4	387:9	357:7
someone's	506:16	sorts 55:24	403:10	378:10
330:19	524:24	90:6 249:4	493:22	386:7
soon 216:4,	538:17	398:23	495:15	416:5
6	539:6	sought	496:11	429:9
	544:19	635:4	speak	487:10
sophisticated	549:14	sound	200:22	542:23
421:2	568:2, 4	124:21	270:19	544:21, 22
sorry 51:23	569:18	496:4	383:23	608:17
61:6 63:19	572:23	sounded	550:23	specifically
69:5 73:3	579:6	591:19	577:2	105:22
87:22	581:7	sounds	speaking	160:1
96:22	582:7	149:19	339:17	197:23
97:19	583:6 633:5	300:13	450:1	206:13
100:15	sort 135:3	591:21	458:14	233:12
101:14	165:14	source	460:20	269:13
112:22	174:18	156:11	511:20	327:22
135:18	192:14	262:13	565:12	377:9
137:23	226:8	508:4		430:19

502:14	231:6	426:4, 16, 20	612:21	spends
503:4	244:19	427:12, 21	626:24	392:1
550:16	268:4	442:6, 18	SPECTRUM	spent 198:9
617:9	274:1	443:7	.PDF 16:14	300:9
Specificity	285:9	444:6	SPECTRUM	552:13
412:14	290:2, 13	446:13	_AUTISM	609:8
specifics	295:11	452:4, 24	23:17	623:24
559:2	297:20	454:9, 15	speculate	624:16
	298:4	455:18	85:1 478:17	sperm
SPECTRUM	321:16	458:20	speculating	269:22
13:9, 12	342:5	465:14	458:4	272:14
14:11, 15, 16,	344:11	469:13	463:14	284:24
20 15:9, 16	349:16	470:14, 18	477:16	319:20
16:9 17:12	350:17	473:5, 15	483:21	353:15
20:11, 18	353:23	474:2, 19	speculation	354:11
23:11	359:21	475:4, 20, 22	68:15, 17	415:18
25:17 26:8,	360:10	479:15	245:8	449:15, 16
12 27:17	361:4	482:17, 23	248:6	493:7
29:8 31:21	362:10	484:9	250:2	SPITZER
41:2 42:4,	363:1	486:14	320:5	11:7, 15
19 48:8	365:21	487:11, 14,	337:23	223:16
51:10 52:7	366:2	23 501:11,	348:10, 12	227:20
57:15 63:5,	367:16	18 502:5	407:22	split 158:14,
18 77:14	368:2, 20	504:4, 14	476:9	23 213:18
103:22	369:11	505:20	478:8, 19	241:4
104:5, 21	370:20	506:6	479:13	spoke 59:16
105:24	371:2, 22	516:13	576:11	60:4
106:12	372:2, 24	517:20	speculative	199:23
110:3	373:2	519:19	345:13	573:1, 6
111:11	375:6	522:22	348:8	576:15
124:11	379:18	523:11	speculatively	577:9
125:15	383:14	524:7	609:19	579:21
126:12	388:10	525:24	speech	608:7
134:19	390:17	526:8, 15	83:23 189:5	spoken
168:5	391:23	528:24	speeches	294:24
170:3	392:17	536:11	188:23	487:2
172:5	393:2, 19	538:8, 13	speed	sponsored
178:14	398:2	546:23	380:11	618:19
181:16, 20	415:7	547:20, 21	440:4	spontaneous
182:3	420:7	548:22	speeding	249:14
183:19	422:13, 17	599:17	383:19	303:17
192:16	423:16	603:12	spell 72:6	315:11
194:23	424:19	605:3	spend 163:8	354:2
199:9	425:3, 12		589:9	451:16

spontaneousl y 269:12 270:12 spot 333:20, 22 504:9 spotted 584:22 spring 47:11 101:8 567:15 SPRINGER LINK.PDF 16:18 spurious 291:1 ssanford@w attsguerra.co m 2:11 SSGA 558:4 SSRI 536:23 537:9 603:1, 5 SSRIs 504:17 506:5 536:18 537:4, 6 ST 19:12 stack 173:10 stage 184:11 stand 332:1 391:4 520:9 537:11 standard 327:6 standpoint 56:22 138:16 202:2 257:21 262:22	stands 356:15 387:22 617:11 start 121:18 128:15 172:16 202:15 203:24 241:10 287:21 443:18 541:7 554:23 574:22 581:20 582:1 583:11 623:8 started 284:5 360:9 365:19 407:8 408:8 593:16 610:14 starting 39:16 392:7 starts 220:13 449:18 state 147:2, 17 148:1 242:21 248:8 272:17 286:24 503:10 513:8, 20 545:10 565:24 608:20 637:5	stated 244:18 STATEMEN T 31:7 46:1 68:20, 24 69:7, 14 81:12 93:6 95:3, 16 168:3 213:22 222:16 225:9 244:6, 15 261:18 285:20 287:23 288:18 321:7 340:20 357:5 419:4 481:15 482:6, 11 484:15 491:21, 23 492:10 493:11 494:20 495:8 498:6 500:7, 11 501:4 521:12 528:10 544:20 548:20 558:24 620:18 621:14 622:9, 20 STATES 1:1 20:14 66:19 108:18	109:1 509:10 510:3 528:14 stating 198:17 statistic 510:5 Statistical 142:6 194:24 statistically 50:23 210:24 266:2 443:19 457:16 470:5 statistics 325:3 stature 311:16 status 153:10 155:15 491:12 493:5 stay 394:20 468:24 steadily 169:17 170:16 203:8 steady-state 451:5 Steering 631:24 634:2 stem 103:19, 23 309:4 stenographic 34:19 step 89:16 428:8	step-by-step 258:12 Stephen 97:5, 6, 8 571:17 steps 87:2, 11 89:14 90:8, 17 575:4 598:16 Steve 59:7 569:8 575:19 stimulate 301:10 stimulates 436:5 stipend 561:3 stipends 560:21 stipulate 130:12 Stipulations 33:10 stochastic 249:15 272:19 stock 561:4 STONE 7:1 Stop 96:10 277:20 322:18 430:23 stopped 277:19 410:3 Stores 6:7 Stores-PNS 7:18 storm 280:20 568:3, 5
---	--	--	--	---

Stormy	strictly	533:2	398:12	81:5
568:7	450:1	550:11	402:20	102:18
story 326:7	Strike	studies	418:9	103:7, 12, 17
	259:8	49:24	421:2, 3	105:9, 10
STORY.PDF	317:3	78:14	428:5	116:10
20:8	355:9	82:18	430:11	142:15
stracey@trac	449:6, 7	99:18, 24	431:3	146:24
eylawfirm.co	string 253:2,	100:1, 5, 10	438:10	147:23
m 3:18	9	106:4, 8, 14	442:11, 20	152:15
strand	strong 43:1	109:7	443:1, 5	158:9
252:7	51:7 273:4	132:4	454:13	159:2, 13
255:2	274:11	143:21	457:12	160:15
380:14	275:14	145:5	458:1, 2	161:14
StrandDx	276:3, 5	146:4	462:1	163:21
380:13	285:15	165:22	465:16	165:5
strategy	365:23	166:11, 24	467:23	166:22
327:9	367:13, 21	167:12, 22	471:9, 18	167:15
534:18	484:6	168:23	473:14, 24	180:6
Street 2:15	stronger	172:3, 11	502:18, 22	185:13
3:4, 16	467:24	176:11	503:11, 16	192:14
6:18 7:4,	473:11	188:1	504:18	195:3
10, 15	strongest	197:23	509:18	197:7
Strength	225:5	219:18	512:8	209:3, 6, 21
412:7	structural	223:3	526:7	210:22
465:2	255:14	226:12, 13	536:4	211:4, 8, 10
466:10	structure	249:10, 12	538:10, 22	221:18
603:18	310:17	258:4	542:2, 3, 4, 5	222:1, 9, 11,
stress 45:18	340:19	260:22	544:17	16, 18, 22, 24
478:22	492:7, 12	276:6	545:6, 22, 24	224:10
479:4, 7, 11,	student	278:21	546:4, 12	225:22
19, 24 480:2,	52:17	290:12, 22	563:5, 16	226:22
19 481:1, 4,	103:18	298:21	564:1	227:17
6, 10 482:6	192:14	299:19	589:13	228:5, 18, 21
493:21	studied	303:7, 13	597:15, 16,	230:11
495:14	95:15	304:1	17 600:20	241:9
499:11	147:5	337:15	602:10	249:4
513:24	148:4	343:17, 24	605:8, 19, 22	259:24
514:20	150:6	350:21, 23	606:3, 6	260:7, 11, 13,
515:1, 22	151:17	351:2, 5, 10,	610:3	15, 18, 21
522:6	300:7	13, 21 352:9	STUDY	261:2
545:15	367:4	359:22	12:18	297:18
605:4	471:4, 5	366:20	22:23	300:5
609:19	481:7	377:11	26:15 75:4	338:2, 5, 14,
strict 186:5	518:17, 20	393:16	77:9 78:12	15, 16, 21

340:17	subgroups	substance	300:5	4:8 5:19
342:12, 13	402:8	251:20, 22	351:5, 13	6:5, 19 7:21
344:3	SUBJECT	253:24	352:9	Sullens
346:19	28:11	254:3	370:19	332:24
348:20	48:17	255:3	380:19	333:24
378:2, 13	335:2	639:11	404:24	335:13
389:4	374:16	substances	413:5	336:6
391:19, 21	394:9	500:3, 23	443:5	SULLIVAN
416:23	637:10	substantial	470:12	4:15 5:4
420:5	subjected	373:11	473:8	
426:15	384:10	substantially	487:8	Summarizing
428:17	451:4	228:15	512:8	443:4 529:2
438:16, 17,	subjugating	229:1	536:17	summer
24 441:8	66:16	substitute	559:5	47:11
443:13	submit	115:23	598:17	567:14
446:6	52:16	substitution	604:5, 7	super 74:4
455:4	378:15	224:22	610:4	281:22
456:22	submitted	225:1	suggested	supervision
461:24	463:21	230:15	45:16	636:22
466:12	suboptimalit	231:14	91:14	supplement
502:16	y 609:13	232:17	196:15	63:13, 22
523:15	subpoena	233:1	224:21	431:19
524:6	36:21	subtraction	346:4	432:24
525:13	445:2 463:3	182:8	381:3	Supplementa
535:4	subsample	success	418:9	l 99:21
543:9	193:21	401:20	447:14	129:23
546:3, 11	subscales	successful	515:20	402:11
600:16	547:23	281:22	605:1	624:9, 22
618:12, 23	Subscribed	561:18	suggesting	SUPPLEME
619:17, 19	639:19	suffered	168:11, 16	NTARY
studying	subsequent	511:10	235:19	31:10 95:2
257:13	165:24	sufficient	473:17	96:6 99:11,
300:10, 11	166:13	282:11	560:2	16 100:4, 13
439:4	167:2	368:9, 22	suggestion	supplementat
stuff 185:4	578:10, 13	427:7	90:23	ion 64:5
402:14		Suffolk	496:20	supplementin
448:11	Subsequently	565:15	suggests	g 64:3
463:5	52:14 570:3	suggest	49:12	supplements
621:12, 20	subset	44:11	80:16	426:3, 18, 22
629:21	144:12	46:13 76:2	159:14	427:19
Sturmey	512:13, 22	120:17	393:12	428:11
180:24	subsidiary	127:3	532:3 620:1	435:22
Sturmey's	563:16	129:12	Suite 2:8,	SUPPORT
183:7		226:16	21 3:10	33:2 143:7

145:5	141:13	481:19	susceptible	Swedish
166:22	145:3, 12, 16	482:13	354:11	550:6
203:9	148:8, 12	485:17	448:21	swinging
213:7, 22	152:15, 24	497:6	449:1	246:8
221:13	153:14	501:5	suspect	switch 411:9
222:2, 12, 16	156:16	504:10	263:14	switching
224:18	157:5	514:11	463:15	548:1
225:22	177:2	519:10	494:23	sworn 35:3
226:12, 14	192:12	520:20	SUSPECTE	433:4
308:9	202:11, 13	522:17	D 13:20	636:5
354:4	206:5	523:1	534:4, 16	639:19
473:24	209:23	527:21	suspicious	symptom
562:24	215:15	531:24	496:4	281:5
563:5	217:24	537:23	Susser	symptomatol
594:24	237:13	585:2	274:6	ogy 186:9
599:24	239:5	587:10	SUSSER.PD	symptoms
supported	274:24	588:1, 17	F 13:15	135:4
225:2	276:18	599:8	sustained	200:7
473:16	297:5	625:2, 4	439:1	245:4
supporting	302:20	Surely	Sven 358:9	269:16, 20
46:17	316:4	508:8	370:10	294:13
487:12	320:6	surface	Swan 69:16,	298:3
supports	325:11	393:17	18 70:23	402:7
78:13	333:22	394:1	71:12, 19	538:14
143:3, 9	337:11	surgeon	73:22 75:4,	synapse
212:5, 7	357:9, 18	245:18	8 76:5	421:20
214:21	358:8, 11	surprise	93:19	synapses
236:5	371:15	398:19	98:12, 13	421:18
594:22	379:24	SURVEILL	570:17	synaptic
614:20	385:8	ANCE 13:8	571:8, 16	437:11
supposed	390:23	surviving	575:16	513:24
238:23	396:18	451:22	577:17	545:14
569:24	410:6, 21	survivors	619:4, 13, 21	SYNDROM
sure 43:9	419:22	457:1	620:20	E 28:19
63:21	422:6	Susan	621:5	295:1, 18, 21
65:21	429:10	138:20	623:17	296:5, 9, 20
66:14, 23, 24	435:20		Swan's	298:13, 20,
67:1, 9, 10	455:2	susceptibility	76:15	23 299:7, 20
93:10	459:9	346:6	570:24	300:7, 10
95:22	462:3	377:14	swath	302:1, 7, 8,
105:8, 15, 17	463:19	457:23	209:13	13, 17 303:9,
109:3	465:8	603:3	swear 34:21	17 304:4, 17
115:23	472:9	605:7	Sweden	305:1, 16
132:7	479:7, 21	609:11	550:2	306:2, 14

307:1, 11, 16, 24 310:7 311:14, 16, 18 312:2 313:14, 19 314:17, 18 315:6, 17, 18, 22 316:1, 21, 24 317:19, 21 318:14, 17 471:11 483:4, 8, 14, 16 513:15, 16 514:5 545:8 syndrome- associated 421:4 syndromes 612:22 synonymousl y 478:11 synonyms 478:14 synthesis 526:5 529:6, 12 530:8 532:4 synthesize 354:11 SYSTEM 13:8 210:7 228:14 229:6 318:24 480:6 519:2, 18, 21, 22 520:4, 12 521:2 533:9, 16 536:13 540:19 543:2	544:6 566:15 SYSTEMAT IC 15:16 181:13 systemic 46:17 487:13 systems 308:24 437:1 438:13 544:3 < T > T32 393:7 Table 99:11, 16, 19, 22 100:4, 13, 18 306:23 406:23 tables 415:1 417:13, 16 418:2 621:15, 16 TABLES.PD F 31:10 take 35:15 37:21 54:5 81:6 83:12 87:5 92:9, 10 107:7 121:17, 21 131:21 134:1 150:15 152:23 153:24 159:9 163:24 172:15 184:21, 22 187:21 191:23	195:11 196:3 197:2 205:19 209:13 215:22 216:7 220:3 259:22 264:4 265:3, 16 295:17 297:11 312:3 323:8 333:18 338:21 339:3 345:23 349:1, 23 357:17 369:18 384:1 410:17 411:20 417:20, 22 427:3, 10 428:7 430:5, 21 432:6, 11 464:24 474:16 480:17 490:23 504:7, 9 508:16 522:23 524:20 532:8 547:6 577:20 580:15 585:19 589:24	592:22 598:18 610:5 612:16 619:11 621:18 625:15, 21 take-home 278:10 taken 1:13 136:12 180:12 311:7 350:6 381:8 398:22 402:19, 23 444:9 504:2 600:13 takes 603:1 talk 48:1 55:14 63:14 77:20 94:18 108:21 109:16 113:20, 23 116:6 117:3 121:8 134:2 142:3 153:12 156:4 204:17 212:17 217:19 244:14, 24 254:12 257:17 259:14 271:11	278:22 287:11 291:11 293:16 294:23 307:9 313:2, 13 326:8 327:20, 23 340:1 368:24 401:3 402:21 413:11 414:19, 23 422:7 425:9 430:7 446:18 465:19 484:16 486:3 488:2 540:23 talked 59:4 194:2, 8 243:14, 16 262:9 330:1 387:3 391:11 398:11 464:19 539:1 548:12, 17 549:2, 5 550:17 576:9, 21 577:4 600:15 606:19 607:10 630:3
---	---	---	---	---

talking	Tavassoli	320:15, 18	telling	586:13
46:21	546:21	608:19	59:24	598:6
47:19 70:8	Taylor	technology's	198:8	test 309:13
71:12	98:20	324:4	199:18	326:24
125:1, 2	tcampbell@k	tecum 36:21	496:16	328:2, 19
140:15	rauseandkins	teens 67:12	tells 42:4	333:1
141:6	man.com	teeth 379:6	266:10, 13	334:2
156:23	3:11	381:4	temporality	336:5
286:15	TD 547:22	384:7	412:3	380:6, 12
287:19	teach	386:16	413:12, 24	413:24
311:15, 22	200:22	391:19	414:24	439:18
366:9	406:17	398:8, 12	TEN 13:19	548:22
395:16	teaching	Tel 489:20	37:5 55:2	549:23
398:8	200:1	tell 41:1	66:18 67:5	608:15
402:1	TEAM	59:5 67:24	154:12	test/retest
416:9	30:16	84:12	534:3, 14, 20	548:5
430:10, 13	79:13, 17	91:16	557:13	testified
434:22	80:10	104:10	558:7	35:4 47:6,
497:11	310:11	132:15	592:22	9, 24 48:17
502:13	426:1	154:10	tends 337:2	130:13
512:18, 19	teasing	227:14	460:24	188:10
521:6, 14, 23	490:9	237:4	tenfold	215:4
529:9	TECH	251:15	160:12	295:9
544:2	137:23	252:4	term	326:24
569:8	149:11	266:9, 12	255:21	328:2, 15
577:16	185:5, 9	293:18, 23	480:3	331:10, 17
579:9	263:24	322:22, 24	termed	415:3
593:17	321:11	329:21	601:13	472:4
607:18	342:22	355:8	terms 61:22	510:24
613:1, 13	539:6	405:19	89:12	512:14
talks 90:8	549:13	407:13	182:7	564:20
373:12	572:8	413:14	197:23	testify
376:10	TECHNICIA	432:16, 21	245:19	254:15
420:24	N 8:9	434:12	258:6	330:7
465:6	TECHNICIA	460:7, 14	278:5	331:4
554:19	NS 8:1	462:5	309:9	334:10
556:14	techniques	564:16	322:13	335:9
Target 7:12	292:13	565:1	325:3, 19	453:3, 5
438:14	technologies	566:1	327:8	480:19
task 299:3	353:19	586:5	370:7	481:3
393:17	technology	614:10, 17	540:6	testifying
586:2	84:4 291:6,	623:12	541:3, 6	255:13
589:11	9, 12 292:7	630:1, 9	553:22	396:3, 5
taught 99:3	293:7		560:20	421:12

480:22	332:13, 20	150:22, 23	thing 74:3	540:21
631:16	335:14	544:24	75:2 115:7	544:6
testimonies	336:19	593:12	219:13	568:9
256:21	379:5	616:14	274:20	577:10
566:7	544:5	THE_BENE	278:18	593:21, 22
Testimony	545:23	FITS_OF	285:12	605:15
9:3 88:1	tests 323:6	22:18	302:8	609:7
130:9	332:14	themes	344:1	think 40:22
155:3	test's 381:3	146:18	352:16	41:22
178:17, 22	Texas 2:9,	theoretical	387:12	47:22 51:2
222:14, 20	22 3:17	290:10	430:15	57:22 59:1
295:13	47:14, 18	433:8 515:6	442:2	60:18 63:8
313:9	48:2 67:11	theoretically	452:16	65:2, 7, 9
322:6	97:11, 13	275:21	581:19	66:9, 10, 21
330:8, 14, 18	410:17	276:2	583:23	67:7 68:9
332:9	411:16	341:3	585:6	69:24 70:4,
333:7	432:22	368:6	588:13	5, 17 71:15,
338:19	Textbook	477:21	624:9 625:9	22 74:6
351:4, 12, 18,	41:2 42:3,	492:11	things	75:16 83:9
23 352:8, 12	18 46:5	518:16	52:21 57:6	84:23 85:9
363:9, 23	52:6 62:20	theories	90:11	94:9, 15
364:5	63:5, 17	529:12	139:1, 2	110:18
390:7, 13	274:1	602:22	140:12	111:9
396:1	365:20	theorize	221:2	112:17
404:1, 4, 15	442:24	475:10	269:9	113:16, 17
431:22	452:4	theorized	272:18	115:4
471:22	463:18	480:8	279:8, 9, 10,	116:7
479:8	505:19	theory	11, 21	118:11
503:1, 14	Thank	538:20	290:21	119:23
522:1	43:10	614:21	299:21	120:3
564:23	150:23	623:14	329:15	122:18
565:7	158:24		378:12	123:20, 22
599:8	207:9	Therapeutics	384:17	125:7, 10
607:14	277:1	560:23	399:1	126:4
620:10	464:2	561:1, 6, 8,	400:12, 19	130:17
629:1 636:6	508:18	13 562:23	425:5	136:21
testing	519:15	therapies	429:6	143:11
292:5	592:19	556:18	430:5, 8	146:11, 14,
323:4, 10	635:10, 12	Theresa	450:20	17, 23
325:4	thankfully	546:21	451:7	148:23
327:12	536:21	THESIS	478:10, 15	149:15
329:9, 16	Thanks	21:13	479:6	150:11
330:5, 19	103:5	172:24	486:15	154:15
331:11	116:2	173:3, 7	516:8	156:19

169:14	388:1	492:11, 14	607:2, 4, 19,	591:23
176:1	392:23	493:11	22 610:24	607:11
206:24	400:15, 22,	494:20	615:24	thoughtful
207:3	24 401:15,	495:21	617:6, 11	70:18
215:5	18 402:16,	496:10	620:4, 11	126:18, 21
219:23	20 407:23	500:11	621:8	163:5
227:11	408:10, 24	501:13	623:7, 16	383:5, 9
237:8, 11	409:2, 13, 19	502:20	627:11	588:2
244:8	410:13	503:2, 14	631:2	thoughts
248:23	421:13	508:9, 11	thinking	263:1, 22
252:2	427:24	512:7, 15, 16	539:17	422:5
254:13	431:5	513:16	541:8	thousand
257:2	438:6	515:5	thinks 45:22	320:12
259:4	441:9	517:1, 6, 8	third	thousands
261:4	442:10	521:13	102:17	212:21
262:21, 23	443:12, 24	529:24	123:3	286:14
264:10	447:1	532:16	343:2, 4	287:1 607:5
270:10	448:14	538:4	373:24	THREAD
277:9	450:9	539:14	486:14, 24	28:10
279:24	451:23	544:10	550:18	threat
282:8	452:14	545:20	558:19	591:20
283:4, 6	453:23	549:5, 24	559:16	threatening
285:22	457:3, 5, 19	558:23	635:5	591:18
290:18	460:4	562:12	third-party	three 56:20
295:12	461:23	563:15, 24	373:18	63:9, 10
297:4	462:2	564:13, 22,	560:7	77:13
305:13	463:2	23 567:13	thirty	123:1, 4
319:12	465:1	570:7, 20	637:16	126:23
320:17	466:4	573:14	THORNBUR	129:6
325:20, 21	467:22	577:8, 10	G 6:9, 16	139:19
326:5	469:18	579:2	Thorsnes	159:16
329:14, 17	470:22	584:20	8:10	167:5
335:19	473:7	587:4	thought	177:8
337:24	474:24	588:11, 12	85:7 221:1	209:20
338:1	475:8	589:21	257:24	216:24
352:15	476:2, 3	593:23	261:15	286:18
354:21	477:6	594:21	321:23	402:20
356:5, 7	481:7, 14	595:6, 9	343:6	415:16
360:20	482:10, 18	596:23	347:23	418:7
376:21	485:2, 24	602:21	368:14	484:20
382:19	486:17	603:16, 23	435:5	485:13
383:17, 21	487:16	604:20	466:11	486:19
385:3	488:16	605:16, 17	513:9, 12	three-inch
387:3, 21	491:23	606:19		173:10

three-	133:4, 5	418:2	timing	286:12
quarters	134:6, 10	434:11, 20	421:10	293:6
236:12	140:21	446:10	TING	294:18
threshold	155:7	485:18	14:11 566:1	296:11
286:6	163:8	486:10	tiny 74:4	325:22
Thursday	173:15	508:19, 23	Tioleco	332:21
244:4	174:17	533:3	470:9	348:3
thyroid	177:7	536:21	tissue	387:23
535:19	184:21, 22	540:10	477:18	453:9
Tidmarsh	185:18, 22	561:9, 10, 13,	tissues	531:13
169:4, 7, 9,	189:5, 20	15 562:5	475:17, 24	589:10
24 170:5	191:3	570:7, 12	476:17	607:11
TILLERY	215:6	573:1, 5	title 72:24	608:8, 11
25:8 59:7,	218:2, 6	574:2, 3	73:3 77:6,	609:9
18, 23 60:3,	232:3, 7	575:19	16, 20 79:12	610:9
6, 19 447:14,	241:10	578:12	177:13	611:9, 15, 16
21 569:8	243:24	586:3	375:5, 8	612:1
570:1, 10	249:16	588:12	392:19	629:21
571:17	256:20, 23	589:9, 18, 22	396:20	Today's
575:1, 19	257:2, 4, 7	592:23	597:5, 12	34:7 588:5
576:22	264:21	593:3	618:16	toddlers
577:16	271:3, 8	605:14	titled	185:15
623:13	275:10, 12	609:8	546:21	500:1
631:11, 21	278:7, 13, 21	610:22	599:16	548:15
632:13	287:19	616:15	610:9	told 58:11
Tillery's	288:22	622:19	618:13	59:16
631:14	300:9	623:24	titles 590:21	130:23
632:16	303:18	624:1, 5, 16,	TOBY	158:10
time 34:8	321:18	17, 23 628:1,	21:13	198:5
38:21	322:15	15 631:4	172:23	205:22
39:21 47:5,	325:6	635:13	173:16	434:4
24 49:15	350:1, 8	TIME.PDF	177:12	464:6
58:12	358:1	28:7	today 34:16,	505:18
59:12, 15	371:14	Timeout	20 63:1	614:14, 24
73:19 81:6	373:9	447:22	212:1	627:18
83:18	382:5	times 77:13	215:7	Tony 176:6
92:11, 15	384:12	119:8	225:18	tool 138:9
94:7 101:9	385:23	167:5	226:24	548:9 549:7
113:24	406:2, 6	261:19	232:10	tools 139:20
116:14, 18	408:7	326:10	237:9	140:15, 22
117:14, 18	410:22	405:8, 23	239:12	421:3
118:15	411:2	454:16	246:20	547:14
122:3	415:1	456:17	248:8	548:13
129:7, 16	417:13, 15	631:1	257:11	

TOP 13:19 66:18 67:5, 13 73:6 79:12 97:24 108:1 146:24 159:3 179:1 209:11 211:12 240:24 280:12 287:7 346:3 358:20 362:7 376:14 392:7 416:1 420:23 459:3 534:3, 20 557:13 558:3, 7 560:9 570:23 574:18 575:9 587:19, 23 topic 597:23 598:1 topics 373:19 top-line 556:16 total 54:4 219:17 294:19 564:22 582:4 623:22	totality 145:14 171:18 226:15 613:18, 19 620:13 totally 53:5 65:4 149:17 291:3 558:13 559:22 touches 440:1 TOXIC 13:19 359:4 499:11 534:3 toxicant 46:13 487:8 toxicants 299:22 489:22 toxicologist 518:19 toxins 362:13 491:13 493:22 495:15 496:11 499:11 500:2 520:11 521:1, 6 TRACEY 3:12, 14, 15 trait 285:8 traits 547:21, 24 transcript 130:1 332:8	402:23 403:1, 14 636:9, 19 637:17, 19 transcription 639:7 transcripts 402:18 624:14 transferred 153:9 155:14 translated 104:15 Translational 369:16 542:6 544:2 transparent 616:1 transpose 136:17 trauma 511:1 treat 307:16 308:9 603:3 TREATMEN T 14:16 18:15 20:8 310:7 385:24 388:10 402:9 439:1 539:18 540:6 544:11 546:2, 4, 6 treatments 361:24 540:9 542:20	543:9, 14 544:5 545:24 tree 382:6 trees 169:15 Tremfya 556:3, 19 trend 230:16 TRENDS 14:15 228:19 236:1 TRIAL 137:23 149:11 185:5, 9 256:5 263:24 300:20 313:2 321:11 330:8 331:5, 9 342:22 390:13 401:19 433:18 440:23 448:2 539:6 549:13 564:22 565:22 572:8 629:6 trials 300:21 309:20 543:15 TRICIA 3:8 tried 74:7 tries 388:8 603:3	trigger 340:9 trimester 415:8, 12 416:18 trimesters 415:17 TRINH 7:14 trouble 124:18 true 38:24 56:6 107:3 111:1, 13, 19 112:17 113:1 121:1 125:24 135:22 140:3 222:10 233:17 238:3, 4 275:2 276:4, 6 285:20, 21, 24 290:17 291:22 292:11, 15 294:17, 22 330:6 337:5 340:20 345:7, 9 359:7 401:23 411:13 419:4 434:15 442:5 452:6 457:15, 16 458:15, 24 464:7
---	---	--	--	--

472:21	383:18	164:17	314:15	UNDATED-
474:24	398:8	165:20	typo 218:17	(20180515
491:24	438:12	176:11		27:7
492:1, 17	497:10	186:19, 24	< U >	UNDATED_
493:12	538:19	187:3	U.S 8:10	ADVANCES
494:23	541:24	209:19	129:12	_IN_THE
495:16	591:5	228:20	170:18	26:19
497:16	604:14	258:5	380:4	UNDATED-
498:1, 4, 13,	trying	264:4, 23	456:20	E-MAIL
18 499:2, 6,	60:20	277:3	Ubiquitin	27:20
16, 19	71:23	283:2, 5	313:16	UNDATED-
518:11, 13,	124:16	329:15, 16	UC 244:1	KOLEVZON
15, 18	149:11, 12	425:4	UCLA	26:22
521:12	322:24	440:12, 17	97:21, 23	UNDATED-
530:3	380:9	441:3	98:2	MOUNT
535:10	384:5, 9	480:18	Uher 358:2	26:15
537:23	400:23	504:13	umbilical	UNDATED-
544:16	464:10	514:7	77:10	MT 26:11
549:24	580:2	539:22	Umbrella	underascerta
559:15, 17	tube 419:7	548:13	192:15	in 228:22
634:15	430:9	557:17	UMBRELLA	underascerta
636:6	turn 177:13	564:17	-	ined 228:24
truly 598:11	209:24	577:10	REDEFININ	underblown
truncated	210:8	597:10	G 20:18	260:23
228:16	557:12	two-thirds	unaware	undercount
trust 57:4	turning	510:2	48:22	165:4, 12
463:23	494:7	TYLENOL	113:19	undercounte
truth 560:13	498:10	30:12	462:20	d 165:3
truthful	twin 258:4	34:13 77:7	485:4	underestimat
195:12	264:6, 8	78:15	uncertain	es 260:23
205:6	276:6	609:21	94:3	undergoing
213:9	277:5, 6	610:5	un-cited	418:21
395:24	366:20	Type	132:22	underlie
truthfully	twins 258:5	137:21	unclear	519:24
74:22 155:3	259:24	138:3	355:5	underlying
try 111:8	264:5	139:10	unconsciousl	370:22, 24
131:1	265:4	177:12	y 446:20	underneath
169:7	266:23, 24	242:1	uncontrolled	583:20
283:7	272:9	461:24	359:3	underscores
297:9	277:4 609:3	557:13	459:15	388:3
308:8	Two 115:15	597:17	uncovered	understand
310:6	124:20	types 541:8	421:5, 6	35:19 36:9
326:24	140:12, 15	typically	undated	61:16 68:2
365:8	161:4		293:19	71:24

78:11	understandin	university	URLs	544:3, 16
105:2, 15	g 250:4	65:24 66:8	557:23	559:4
118:22, 24	272:18	67:11, 18	USE 19:7	602:13
121:7	383:12	97:11	30:8, 17	606:10
145:16	387:12, 13	241:8	31:7 38:19	607:12
151:9, 12	393:18	489:8, 14, 20	50:12, 17	614:21
176:14	413:17	490:17	68:22	618:14
188:20	479:10, 16,	619:9	73:11	619:23
190:17	24 494:12	unknown	75:23 76:3	620:1
196:24	502:2	240:2	78:15	621:7, 24
202:11, 20	526:24	606:24	79:19	626:23
205:10	529:10	607:3 612:6	80:13 91:7,	627:10
232:3, 4	631:13	unqualified	19, 20 92:9,	USE-DNA
246:20	understood	558:13	17 94:3, 11	21:16
272:15	599:8	559:22	95:4	useful
287:20		unstable	101:13	526:13
309:7	understudied	317:15	150:4	528:2
312:6	349:18	untrue	159:22	uses 133:11
320:7	undoubtedly	535:12	239:5	496:2
324:15	133:16	update	258:3	USE-YALE
354:9, 23	unfolding	46:14	271:23	31:14
364:13, 14	143:13	507:2, 11	276:2	usually
365:6	unfortunatel	updated	290:20	327:5
383:19	y 55:12	52:16	296:23	461:8, 22
386:21	unfounded	465:10	300:22	462:7
389:24	527:14	504:23	309:6	uterine
390:10	unhighlighte	508:12	353:17	436:5
394:11, 24	d 606:22	634:23	358:15	609:18
397:15	unidentified	updating	401:1	utero 265:7,
419:3	273:15	463:18, 24	406:6	21 377:20
459:2, 10	uninsured	upper	421:1	413:18
460:19	555:21	290:6, 8	426:17, 22	415:2, 7, 21
480:11, 13,	Union	429:2 505:2	427:19	416:18
14 509:19	510:17	upregulated	428:11	418:12
530:9	Unit 3:16	104:16	459:22	532:6
539:17	UNITED	uptake	482:15, 20	uterus
541:2	1:1 20:14	487:9	496:3	413:22
543:6, 7	66:19	up-to-date	502:19, 23	utilized
552:8, 15	108:18	39:7 575:3	503:13	168:24
597:1	109:1	urgent	508:3, 5	
601:23	509:9 510:3	134:21	510:3, 7, 8,	< V >
613:15	universe	500:3	21 532:6	vaccines
614:10	270:6, 7	urging	536:5, 23	71:10
631:11	389:24	94:11	543:5	

Vague	294:19	498:22	511:4	350:1, 8
60:11	295:2, 10	500:22	513:4	410:22
95:18	303:2	various	518:21	411:2
104:24	327:13	36:11	565:2	508:19, 23
124:24	variants	68:24	566:2, 14, 19,	587:6
158:2	257:21, 22,	142:4	23	592:23
202:18	23, 24 258:1,	340:17	VI 411:23	593:3
246:17	3 280:5, 10,	378:24	VIDEO	635:13
248:22	23, 24 281:2,	402:17	19:21	videos
249:8	12, 17, 20, 23,	473:9	34:10	276:14
250:2, 15	24 282:1, 9	520:10	262:21	308:13
272:5	285:4, 14, 17	521:1	263:8, 22	310:1 539:1
482:11	286:16	543:9	264:3	VIDEOTAP
544:20	287:2	551:18	266:18	E 8:1
558:24	291:4	596:17	276:10	Videotaped
vaguely	293:8, 15	vast 244:9	277:2, 19	1:8
369:13	294:7, 24	506:3	278:2	view 82:2, 6,
596:4	302:19	Veerle	279:15	8 200:2, 3
621:17	320:10	621:3, 5	282:19	226:3
Vahe	321:17	Venue 1:14	283:1	viewed
369:10	326:15, 21	36:5	284:12	182:19
392:24	variation	verify 243:8	293:17	vigorous
validate	251:4	version	294:3, 15	501:1
401:17	259:17	39:7 52:6,	301:3, 8	Viktorin
428:6	262:14, 16,	16 152:6	302:2	357:15, 21
validity	17 370:24	206:23	308:22	459:13, 20
159:21	variations	versus	309:23	Viral 423:3
valproic	261:13	106:11	321:22	469:23
501:14	269:14	109:17	322:10, 17	virtue
600:17	270:1, 3, 4	194:5	324:3, 7	261:17
valuable	280:14	238:24	401:6, 13, 21	457:21
544:4	282:13	240:8	436:17, 19	603:2
547:13	286:1, 5	257:18	437:23	virus 279:3
values 239:9	460:19	258:7	439:8, 14	visit 49:8
Vanguard	varied	316:10	441:1	215:12
558:4	464:20	324:2, 3	539:12, 19	vitae 38:6
VARIABILI	491:14	325:18	540:3	39:1 64:16
TY 28:19	varies	334:1	541:10, 22	Vitamin
306:13	443:13	351:23	542:8, 18	431:7, 11, 13,
variables	variety	363:10, 24	543:20	16, 17, 20
50:22	166:20	408:13	VIDEOGRA	432:6, 11, 17,
variant	400:19	411:12	PHER 34:2,	23, 24
281:13	417:13	416:20	5 134:6, 10	434:23
293:10		471:22	218:2, 6	

435:13, 17, 20	Wal-Mart	219:14	554:21	34:11
vitamins	6:7	240:21	573:9	566:16
429:6	WALMART.	244:14	574:4, 6	waste
430:5, 21	PDF 21:11	259:22	576:6	154:12
431:10	WALTERS	262:20	587:23	watch
vocal 201:1	3:12	263:1	588:10	582:19
voice 302:4	WANG	276:9	590:9	watched
VOL 10:17,	14:12 78:5,	302:11	591:7	277:11
22 11:10	17 79:1, 5	308:13	594:16	324:8
Volkmar	want 37:21	321:22	595:21	watching
162:24	40:23	327:19	599:7	441:13
163:12, 20	41:21 49:8	330:13	601:22	582:23
164:12	75:2 80:21	331:18	602:2	WATTS
Volume	85:1 95:9	339:9	604:22	2:1, 3, 4
218:15	97:9	368:24	607:7	9:7 35:8,
268:6	102:12, 13,	373:5	624:3, 19	24 37:12
vulnerability	16 103:4	374:12	wanted	38:2, 8, 13,
298:5	108:20	395:16, 22,	38:9	15, 23 39:13
361:3 362:9	116:9, 21	24 396:2	154:16	41:14, 22
vulnerable	117:3, 16	398:17	177:17	42:1 43:9,
502:7	118:6	401:5	178:6	11, 17 46:8,
	119:5	410:14	214:8	9, 11 47:12
	121:8, 16	411:9	287:21	48:24
< W >	134:14	413:11	396:12	51:23 52:9
Wait 91:1	135:14	414:23	462:15	54:6, 12, 22,
92:2	147:7	416:4	611:10	24 55:10
112:20	148:15	417:14, 21	wanting	57:7, 12
175:20	149:13	419:22	63:14	59:19 61:1
178:9	151:11	422:7, 10	wants 164:4	62:4, 24
188:16	152:14	429:20, 24	392:11	64:12, 16, 24
297:4	153:11	430:3, 4, 16,	395:17	67:23
435:2	155:20	19, 21 432:4,	WARN	68:18 69:4
448:8 632:9	156:4	11 435:19	30:17 79:19	70:24 71:6
waitlisted	172:16	462:2	warned	72:17, 22
489:4, 18	176:15	463:17	91:12	73:2, 5
Walgreen	177:9	466:3	625:14	74:5 75:1,
6:13	184:11, 24	478:17	warranted	19, 21 76:16
Walgreens	185:1	483:21	602:10	77:5 78:2,
6:14 625:24	195:12	485:19	warranting	4, 22 79:11
walk 38:20	204:16	488:2	466:12	80:4, 6, 9, 18,
Walmart	205:6	490:22	Washington	20 82:10, 12
6:7 334:1,	211:16	539:14	1:14 6:5,	84:2, 11, 21
23 625:24	214:24	541:24	19 7:22	85:6, 20, 22
	215:23, 24	544:10		86:11, 13, 18,

23 87:1, 8, 16, 18 88:5, 9, 22 89:23 90:3, 14, 16 91:5 92:7 93:4, 10, 14, 16 94:20 95:1, 13, 21 96:4, 21 99:9 100:11 101:7, 16, 17, 23 102:1, 9, 15, 22 103:2, 6, 11, 14 105:5 106:6, 16, 21 107:11, 21 108:8, 11 109:15 110:10, 21 111:24 112:4, 6, 18, 21, 22, 24 113:5 114:5, 22 115:13, 17, 19, 22 116:3, 19 117:19 118:1, 18, 20 119:18 120:11, 13 121:14, 19 122:2, 7, 14 123:10, 12 125:5, 13, 22 126:6, 15 127:23 128:3, 4, 8 129:22 130:11, 19 131:7, 9, 21 132:3, 18, 19, 24 133:24	134:5, 13 136:5, 11 137:9, 11, 21 138:1, 3, 5 139:9, 17, 18 141:1, 3 144:17 145:22 146:9 147:10, 15, 20, 24 148:12, 17 149:9, 13, 19, 23 150:8, 15, 18, 24 151:6 152:3, 16 153:4 154:2, 9, 18, 22 155:8, 10 156:20 157:4, 8, 11, 14 158:6, 21 159:12 162:7, 9, 20 163:10, 14, 19 164:8, 11 166:23 167:7, 11 169:21, 23 170:13 172:14, 22 173:5, 18, 23 174:2, 20 175:1, 22 176:9, 17 177:2, 11, 18 178:1, 11 179:2, 23 181:4, 10, 12 183:2, 5, 16 184:7, 10, 18 185:3, 6, 10, 11 186:14 187:5, 11, 23	188:8, 14, 18, 22 189:4, 10, 13, 17 190:2, 7 191:10, 13, 16, 24 192:10 193:4, 13 194:12, 18, 21 195:13, 17 196:1, 7, 13 197:8 198:3, 15 199:3, 6, 16, 21 200:10, 13 201:3, 24 203:1 204:7, 19, 20 205:1, 7 207:7, 10, 20 208:13 209:22 211:6 212:11, 14 213:11, 17 214:22 215:11, 16, 19 216:6, 10, 21, 23 217:24 218:9 219:2, 7 220:9 222:17, 23 223:14 224:3 225:16 226:18, 21 227:13 228:2, 9, 11 229:14 231:15, 18 232:8 233:13 234:19, 24	235:6 236:6, 24 237:17 238:8, 18 239:13 240:4, 18 241:4, 5, 20 245:21 246:4, 13, 22 247:1, 9, 13, 23 248:12 249:1, 17 250:7, 18 251:9 252:15 253:4, 11, 22 254:16, 20 255:10, 16 256:1, 3, 8, 19 258:19 259:4, 8, 11 262:2, 5 263:10, 17, 20 264:2 266:19 267:5, 19 268:1 271:4, 22 272:10 273:9, 21 274:3, 4 275:3 276:18, 23 277:20 279:16 282:17, 23 284:13 288:8, 10, 13 289:4, 20 294:16 296:1, 3, 18, 24 297:5, 11, 15, 17 298:17	299:8, 17 300:2 302:3 303:20 304:6, 20 305:3, 18 306:10 308:6, 17 309:24 312:18 313:12 314:19 315:5 318:11 320:8 321:6, 12, 13 322:8, 18, 21 324:5, 18 325:12 326:16 327:10, 24 328:9 329:7, 20 330:21 331:2, 22 332:2, 7 333:11, 16, 21, 23 334:16, 22 335:6, 11 336:1, 4, 12, 18 337:10, 20 338:4, 12 339:8, 23 340:7, 15 341:5, 12, 16 342:18, 21, 23 343:5 344:6, 14, 17 345:3 346:2, 17 347:18, 22 348:6, 9, 14, 16 349:3, 7,
--	--	---	--	---

23 350:14	417:9	490:7	549:16, 18	627:8
352:4, 19	425:22	491:6, 9	551:6, 16, 24	628:2, 12, 18
353:1, 6	427:17	493:15, 17	552:7	629:4, 14, 17,
355:1	428:23	495:2, 10, 11,	553:2, 9, 14	19 630:17
357:8, 13	429:10, 17	19 496:13,	554:10, 18	631:7
359:12, 16,	432:9, 20	22 497:1, 4,	555:1, 22	632:7, 11
24 360:3	433:11, 17	8, 20 498:7,	557:1, 7, 11,	633:1, 24
361:15, 17,	434:3, 10, 17	19 499:7, 20	18, 22 558:1,	634:7, 22
21 363:7, 20,	435:4	500:16	17 559:3, 11	635:9
22 364:6, 12	436:10, 16	501:24	560:3, 5, 15,	way 39:18,
365:3, 13	437:24	503:8, 24	19 563:8, 10	20 49:3
366:10, 16	441:2, 19	504:10, 11,	565:6, 14	55:13
367:7, 10, 24	446:1, 4, 16	24 505:4, 23	566:6, 8	73:18
369:20	447:12, 19	506:13, 19	568:12, 14,	85:24 86:8
370:1	448:1, 8, 12	507:10	24 569:21	116:10
374:2	449:9	508:15	571:22	118:4, 6
375:1, 19	450:24	509:2	572:4, 9, 12	122:24
376:3	451:12	510:15, 23	573:16	123:8
379:2, 16, 24	452:20	511:24	574:17, 23	130:20
380:2	453:14, 16,	514:11, 13	576:12	135:2
381:23	18 454:1	515:9	577:14	144:22
383:7	455:1	516:20	580:20	159:3
384:4, 18, 22	456:1, 6	517:4	583:21	182:19
385:18	459:11, 24	518:5	584:19	200:4
386:10	461:2	519:10, 16	585:4, 14	230:6
388:18, 23	463:12	520:19, 21,	586:4, 10	245:11
389:13	466:21	23 522:16	587:2, 13, 18	249:3
390:11, 22,	468:18	523:2, 4	588:4, 21	251:11
24 391:3, 10	469:20, 24	524:16	589:16, 19,	253:15
392:6, 12	470:2	525:5	23 590:2, 15	262:8
394:7, 20	471:3, 24	527:8	591:15, 21	274:19
395:2, 13, 21	472:2	528:8	592:1, 3, 13,	281:6
396:2, 6, 11,	474:15	530:21, 23	17 596:10	282:2
17 400:8	475:1, 11	531:2, 19	607:15	309:17
401:10, 22	476:13, 20	532:10	614:5	338:5, 14
404:2, 17	477:24	533:14	616:16, 21	381:10
405:3, 6, 13,	478:12, 20	534:9	617:18, 22	383:20
17 406:14	479:3, 20	539:3, 8, 20	618:5, 9	390:4
407:16	481:18	541:11	619:5, 7, 11,	402:8
408:9	482:2	542:9	12 620:16,	431:6
409:4, 17	483:6, 23	543:21	23 622:5, 18	443:1
410:6, 10, 21	485:11	545:3, 5	623:5	444:24
411:8	486:6	546:19	625:7, 22	460:6, 12
415:22	488:8	547:8	626:10, 20	468:20

478:4	599:6, 12, 22	77:24	276:5	474:11
480:8, 19	600:24	82:21	284:19	476:14
484:14	612:17	88:23	296:21	479:14
489:5	Wednesday	103:8	297:8	480:2
518:6	262:24	107:17	304:10	482:19
530:12	weeds	116:20	313:5, 7	486:7
544:7, 13	302:12	117:23	319:17	489:15
554:9	Week	119:5	328:1	495:19
558:16	419:18	123:22	329:21	505:2
574:14	464:13	124:23	330:9	508:11
613:15	574:5 624:6	125:23	334:19	512:20
ways 261:5	weekly	126:2	340:16	514:1
308:9	458:21	139:5	342:11	518:12
383:19	weeks 63:9,	140:20	343:3, 19	532:22
388:2	11 418:12	144:2	346:18	535:17
541:24	419:8, 17, 19	145:2	355:2	545:10, 15
Wazana	420:9, 16	153:10	356:10	569:22
156:7, 8, 10,	421:8, 19	154:14	361:16	570:16
21, 24	458:22	162:16	362:6	573:10
157:18, 22,	459:6	169:4, 9	363:8	574:5
24 159:3, 13	485:13	176:17	366:14	581:14
161:9, 17, 20	486:19	177:5	368:4, 17	582:24
162:11	WEIGHING	178:21	371:10	589:19
weak	27:18	184:8	384:20	591:6
280:17, 22,	455:19	186:16	395:5	611:18
23 281:14	weight	188:14	404:11	622:19
290:20	362:12	189:1	415:3	624:4
Web 24:15,	423:12	195:9	425:4	628:6, 12
18 397:22	452:21	204:23	429:24	634:24
618:18	454:17	212:6	430:17	well-
web-based	456:15	227:14	434:14	controlled
243:6	457:4	233:14	445:17	506:8
WebEx	458:7, 8	234:13	446:2	well-
575:2, 20	467:14	237:10	447:13	intentioned
WEBSITE	weight/preter	241:1	448:1	126:18, 21
26:11 73:1	m 457:1	246:5, 14	453:11	383:6, 10
90:7	welcome	249:2	455:15	well-known
503:20	38:17	250:19	456:3	535:8
504:1	417:19	252:2	462:8	well-
505:6, 9, 15	593:10	255:10	464:8	respected
506:22	Well 39:8	262:22	465:21	57:20
507:3, 8, 21	45:20	267:20	467:5	Wendy
508:3, 8	49:14	271:15, 23	469:21	130:1 387:9
553:16	51:21	273:1, 22	471:15	

went 48:16	350:9	608:6	Witness	149:2
62:20	387:11	629:23	33:5 34:22	153:2
67:10, 17	393:24	what'd	35:17 38:9	154:23
132:5	400:23	525:16	39:12	156:21
143:17	406:21	whatsoever	43:13, 15	157:2, 9, 13
144:11	416:9	362:4	47:9 48:5,	158:3, 18
210:17	444:3	402:3	21 52:3	161:20
217:16, 20	463:17	631:14	53:18 55:8	162:18
488:19, 24	507:15	WHITE 2:7	57:3, 10	163:3, 17
489:7, 8, 10,	508:24	28:11	59:11, 15	164:3, 10
13, 19	512:19	Whoa	60:12	166:17
we're 36:9,	521:6, 14	447:17, 18	61:21	172:10
10, 16 70:8	544:2	Wholesale	62:11 64:9	174:21
71:10	593:4	6:22	68:9 70:22	178:22
87:17	608:11	wholly	71:4 76:13	179:22
112:6	WES 293:4	317:6	78:20 80:1	184:19
121:19	West 2:21	wide 498:22	83:24 86:8	186:18, 23
128:6	5:11	500:22	88:18	188:24
129:8	Western	533:18	89:21 91:3	189:19
131:5	1:13 36:5	widely	92:4 95:19	190:16
133:24	we've 98:19	509:21	96:3, 19	194:8
134:2, 11	206:19	wider 421:1	99:7 100:9	196:5
149:17	210:19	Williams	102:12	197:3, 21
152:24	218:10	315:22, 24	103:10	198:13, 21
156:19	271:1	316:21	105:3	199:13
164:1	280:7	willing	106:3	200:21
169:14	285:22	374:13	107:9	201:23
182:22	287:5	614:15	110:12, 16	202:21
184:8	292:12	624:21	111:18	204:3
188:8	305:6	window	112:12	206:21
218:7	309:22	418:19	114:19	208:7
249:18	320:10, 15	540:12	115:8, 15	209:10
250:8, 19	356:5	545:22	116:2, 13	213:6, 15
257:13	360:20	546:1	117:13	214:19
258:11	365:1	windows	119:13	215:5, 15
259:14	389:20	46:16	120:3	222:15, 21
263:7, 18	397:12	375:14	122:1, 12	225:14
272:20	411:17	376:19	125:10, 20	226:2
279:9	440:17, 20	487:10	126:3	227:7
283:12	536:23	Wisconsin	134:4	229:11
288:8, 10	542:20	67:18	138:2	231:1
297:15	548:16	489:9, 14	139:14	232:1
311:22	549:2, 5	wish 565:23	144:5	233:11
325:20	560:10		148:7, 16	234:17

235:24	327:5, 19	415:15	517:1, 24	633:22
236:17	328:6, 23	428:21	519:7	634:5, 18
237:21	329:14	429:16	520:17	636:5, 6, 8
238:16	331:20	431:23	522:11	637:1
239:4, 20	333:9	432:15	524:11	women
245:17	334:11	433:7, 23	527:6	76:2 79:20
246:3, 12, 18	335:18	434:8	528:6	80:15
247:6	336:10	441:17	531:17	93:22
248:7, 23	337:8, 18, 24	445:23	533:13	426:10
249:9	338:10, 20	446:22	549:14	448:19
250:3, 16	339:16	447:1	550:23	499:24
251:2	340:6, 13	448:3	552:2, 24	510:2, 8
252:21	341:2	450:23	553:8	619:22
253:8, 19	343:21	451:11	554:8	620:3 627:6
254:11	346:13	452:13	555:13	Women's
255:12	347:13	454:20	556:23	88:15 89:6
256:15	348:7	459:9	558:12, 23	595:24
261:24	352:15	466:17	559:9, 21	WOMEN-
267:4, 18	354:19	468:16	560:17	YA.PDF
270:23	357:4	469:16	565:9	30:18
271:19	361:8	470:22	569:18	Wonderland
272:6	363:4, 14	474:13, 22	573:14	247:18
273:10	364:3	475:8	577:8	Woodland
274:24	365:10	476:10	584:16	7:4
277:13	366:6	477:5	585:2	word 83:17
282:7	367:20	478:9	586:1	84:13
288:6, 12	373:22	479:1, 14	587:8, 22	199:8
289:2	375:22	481:14	591:23	239:5
298:11	378:19	483:2, 20	592:11	276:2
299:3, 15	380:1	485:2, 23	596:12	389:22
300:1	381:17	490:4	607:17	446:7
303:12, 24	383:4, 17	491:5, 8	614:7	447:4
304:15, 23	384:15	494:19	618:4	468:24
305:11	385:15	495:20	619:6	496:2, 3
312:16	386:4	498:3, 16	620:11	600:3
313:8	388:14	499:5, 18	622:3, 14	618:15, 16
314:13	389:11	500:10	625:4, 19	625:10
315:2	390:8, 20	503:2	626:5, 16	626:1
320:6	396:15	506:2	627:3	627:19
322:7, 19	399:24	507:2	628:24	words
323:24	403:18	510:13, 20	629:11	46:23 47:2
324:14	407:13, 23	511:19	630:7	49:20, 22
325:9	408:24	515:5	631:2	84:7 91:4,
326:14	410:7	516:16	632:4, 23	10 92:19, 21

150:3	464:15	worries	583:3	484:11, 13
151:7, 14, 19	489:4	74:17	584:2	487:6, 19
154:5	509:4	149:22	601:23	514:16
155:16	543:14	150:22	603:8	515:24
171:4, 13	544:11, 12	worry	605:12	532:12, 13,
174:11	574:21	588:19	623:2	23 556:24
181:22	580:7	worth	writes 461:7	594:9
187:1	581:6, 12, 14,	432:3	writing	596:13, 14
197:4	15, 16	545:23	462:7, 11	620:19
229:16	583:17	597:14	584:10	wrong 70:9
232:22	606:4	worthy	written	199:19
253:2, 9	622:22, 23	344:3	37:5 42:24	217:16, 20
316:19	worked	361:11	43:18, 22	220:18
343:22	69:20	535:2	44:20	225:23
345:14, 18	349:12	wow 73:4	49:19	226:23
354:6, 15, 20,	357:24	Wright	51:11, 12, 13	231:22
22 355:17	358:6, 9, 13	72:2, 4, 10	52:20	259:13
371:8, 10	546:7, 9	W-R-I-G-H-	62:13, 16	309:9
378:5	550:8	T 72:8	65:6, 14	317:8
381:18, 19	594:10	Wright's	83:17	453:23
434:12	working	72:3	86:22	543:7
596:21	60:14	write 42:10	89:22 90:4,	wrote 42:9
work 66:3	73:19	52:18 81:1	11 118:4	43:23
69:19	281:19	109:19	130:14	44:15 45:3,
104:22	310:4	126:24	131:15	14, 21 46:3
105:19	392:1	128:19	151:20	50:7 52:12
114:13	393:21	137:10	169:10	122:8, 16, 19
123:15, 18,	394:8	145:17	174:12	123:4, 14
24 157:24	396:19	274:6	198:7	128:1
206:2	410:4, 20	320:21	199:17	243:12
237:4	425:23	321:15	203:19	352:20
240:6	447:11	353:14	208:8	357:14
251:13	490:14	359:8	240:20	358:13, 20
296:8	582:21	369:9	352:18	360:18
300:24	583:11	370:2	360:19	368:12, 13
307:14, 15,	works 56:8	444:20	365:11	370:5
19, 20	98:16	454:3, 11	366:7	371:4
309:15	114:20	472:14	368:18	372:16
357:23	546:6, 8	486:2	382:9	452:7, 9
358:3	work's	513:7	404:23	454:12
374:5, 6, 9,	296:19	518:12	422:18	460:21, 23
16 437:5	world	528:18	468:20, 22	473:1
438:13	509:22	547:12, 19	473:20	502:8, 10
461:12		549:19	481:5	512:1

514:6, 15	100:10	301:3	467:2, 9	123:16, 23
518:14	104:8	302:5, 9, 23	477:1, 5	129:13
545:19, 20	105:6	305:11	482:10	133:15
546:21	107:9	306:11	484:13	143:6, 14
601:6	112:5	310:19	485:12	160:13, 15,
609:7, 9	116:9	317:2	491:18	20, 23
629:20	119:7	318:6	510:6	165:21
	128:15	319:13	512:10	170:17
< X >	129:15	323:2, 19	523:24	202:9
Xiaobin	130:2, 7	328:18	525:8, 18	203:14
78:5	136:21	330:21	529:2	212:20
	139:14	333:21	533:2	213:16
< Y >	141:22	335:18	537:12	228:18, 23
Yale 66:13,	143:19	338:1	541:14	230:10, 11
14, 18 67:5	145:20	339:16	547:17	234:8
68:4 71:13	148:7	348:9	548:8	256:21
79:6, 14, 18	149:5, 24	366:13	557:11	274:20
80:12 81:9,	150:2	370:10	570:2, 11	287:12
20 82:13	154:6	371:5	571:24	441:23
83:7 98:19,	164:3	386:19, 20	574:11	450:15
20 101:2, 11	185:10	387:2, 17	581:2, 8, 16,	451:4
103:18	193:16	389:11, 18	23 582:11	489:16, 23
105:19	203:2	393:23	588:7	512:2
594:3 617:2	212:19	394:23	624:8	514:8
YALE-	217:3	395:2	626:11	529:7
20210930-	219:9, 10, 22	413:2	631:2	594:11
SCIENTIFI	220:16, 17	417:3, 24	year 46:1	601:6, 19
C 30:16	221:4	423:9	47:1 50:10,	608:9
YALE-	242:2	424:16	19 53:13	610:20
20220300-	247:17	426:9	141:11	611:3
YSPH 31:12	251:14	429:3, 16	155:24	622:21
y'all 349:21	253:5	431:23	331:10	YEARS-
Yeah 36:13	256:18	433:2, 23	366:15	AUTISM
39:12	258:15	439:5, 6	369:15	20:12
43:11, 13	259:4	442:23	372:16	Yep 38:22
49:21 50:7	260:6, 14	443:24	390:14	73:8 100:1
53:18 56:2	268:12	445:9	432:22	157:1, 13
57:10 64:9	275:13	449:12	433:4	166:4
67:17	276:23	450:7, 15, 16,	458:6	174:1
71:15 72:5	287:18	17 460:20	481:21	216:2
74:5 84:8	288:17	461:15	515:19	217:11
88:18	289:13, 14	463:22	611:18	238:19
97:16 98:5	291:20	464:11, 23	years 37:5	250:12
99:15	299:9	465:4	55:2 117:9	260:3

262:19	242:11, 16			
268:16	630:19			
273:9	YouTube			
289:5	293:18			
290:1	YPSH 30:16			
310:12	YSPH 79:13			
342:20				
344:14	< Z >			
358:24	Zander			
428:18	183:20			
542:12	Zander's			
569:9	183:11			
575:17	zero 320:10			
590:24	Zeyan			
yes-or-no	80:22 81:8			
167:8	Zhu 21:20			
yesterday	523:15			
247:8	525:9			
yield 323:9	Zoom 2:5, 6,			
325:11	7, 19, 20 3:3,			
YORK 1:1,	9, 14, 15 4:3,			
14 3:5	4, 5, 6, 7, 15,			
4:17 5:5,	16 5:3, 4, 17,			
12, 19 6:11	18 6:4, 10,			
7:21 34:12	17, 18 7:3, 9,			
36:6, 10	15, 20 8:12			
489:2, 19	43:7 567:18			
565:15, 20				
567:17				
631:18				
YORK.PDF				
19:10 24:9				
26:13, 17				
young				
160:6				
172:23				
185:16				
186:7 511:8				
younger				
111:22				
137:13, 17				
201:11				
226:6				
236:21				